Publications of the AIAA

1974 Subject and Author Indexes

AIAA Journal
Journal of Spacecraft and Rockets
Journal of Aircraft
Journal of Hydronautics
Progress in Astronautics and Aeronautics
Astronautics & Aeronautics

A Publication of the American Institute of Aeronautics and Astronautics

AIAA

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS
1290 Avenue of the Americas, New York, N.Y. 10019
(212) 581-4300

1974 OFFICERS

President
DANIEL E. FINK

Treasurer
JOHN H. SIDEBOTTOM

Vice Presidents
Education: DANIEL B. DeBRA
Publications: GORDON L. DUGGER
Section Affairs: HARVEY M. COOK JR.
Technical Activities: STARR J. COLBY

1974 STAFF OFFICERS

Executive Secretary
JAMES J. HARFORD

Secretary and Controller
EDWARD H. SEYMOUR

1974 BOARD OF DIRECTORS

Directors-Technical
RICHARD E. ANDEEN
FRANK A. CLEVELAND
EUGENE S. LOVE
WILLIAM M. MAGRUDER
RENE H. MILLER
GEORGE E. MUELLER

Directors-at-Large
RICHARD D. DeLAUER
ROBERT E. HAGE
GRANT L. HANSEN
JOHN W. LUCAS
WILBUR L. PRITCHARD
JAMES T. STEWART

Directors-Regional
WILLIAM B. BRIGGS
CHARLES W. DUFFY JR.
HERBERT FOX
WALTER T. OLSON
ALAN POPE
JAMES A. RALPH

Director-Past President: HOLT ASHLEY

MEMBERS OF THE 1974 PUBLICATIONS COMMITTEE

Vice President-Publications and Chairman: GORDON L. DUGGER

H. NORMAN ABRAMSON
PIER L. BARGELLINI
STARR J. COLBY
HARVEY M. COOK
LESTER L. CRONVICH
DANIEL B. DeBRA
DONALD C. FRASER
DAVID H. GARBER
JERRY GREY
STEPHEN H. MASLEN
BERNARD S. MORGAN JR.
BENJAMIN PINKEL
JOHN LEITH POTTER
EDWARD W. PRICE
JOSEPH A. SCHETZ
LEO STEG
MARTIN SUMMERFIELD
WALTER C. SWAN
CHANG-LIN TIEN

1974 JOURNAL AND PROGRESS SERIES STAFF

DIRECTOR, SCIENTIFIC PUBLICATIONS
RUTH F. BRYANS

MANAGING EDITOR, SCIENTIFIC PUBLICATIONS
ANNE HUTH

PRODUCTION MANAGER
BONNIE SILVERSTEIN

ADMINISTRATIVE ASSISTANT
JEANNE GODETTE

1974 A&A STAFF
ASSOCIATE EDITOR STANLEY BEITLER

1974

TECHNICAL EDITORS

AIAA JOURNAL

EDITOR-IN-CHIEF
George W. Sutton

ASSOCIATE EDITORS
Charles D. Babcock Jr.
Richard H. Battin
Anthony Demetriades
John B. Dicks Jr.
Fernando L. Fernandez
I. E. Garrick
Henry J. Kelley
Nelson H. Kemp
Tom J. Love Jr.
Theodore H. H. Pian
Louis A. Povinelli
Walter R. Warren

JOURNAL OF SPACECRAFT AND ROCKETS

EDITOR-IN-CHIEF
Ralph R. Ragan

ASSOCIATE EDITORS
Kenn E. Clark
Francis W. French
Paul F. Holloway
Leonard Meirovitch
Joseph V. Mullin
William F. Powers

JOURNAL OF AIRCRAFT

EDITOR-IN-CHIEF
Allen E. Fuhs

ASSOCIATE EDITORS
James E. Dougherty Jr.
John H. Povolny
Roy E. Reichenbach
Edwin B. Stear
Sheila E. Widnall
E. Carson Yates

JOURNAL OF HYDRONAUTICS

EDITOR-IN-CHIEF
John P. Breslin

PROGRESS IN ASTRONAUTICS AND AERONAUTICS

EDITOR-IN-CHIEF
Martin Summerfield

ASTRONAUTICS & AERONAUTICS

EDITOR-IN-CHIEF
John Newbauer

MANAGING EDITOR
Bruce Frisch

Published by the American Institute of Aeronautics and Astronautics Inc. at 20th & Northampton Sts., Easton, Pa. 18042, U.S.A. Editorial Offices: 1290 Avenue of the Americas, New York, N. Y. 10019. Cable address: INSAERAST NEWYORK. West Coast Office: 9841 Airport Blvd., Los Angeles, Calif. 90045. Washington Office: 1625 I Street N. W., Suite 606, Washington, D. C. 20006. Price: Free for each JOURNAL subscription; additional copies available from AIAA, 1290 Avenue of the Americas, New York, N. Y. 10019, $10.00 per copy (**remittance must accompany order**.)

Subject and Author Indexes of Technical Papers Published in the AIAA Journals, Progress in Astronautics and Aeronautics, and Astronautics & Aeronautics in 1974

AIAA Journal (Vol. 12, 1974)

Issue	Pages	Issue	Pages
January	1-128	July	881-1008
February	129-256	August	1009-1168
March	257-416	September	1169-1296
April	417-576	October	1297-1456
May	577-736	November	1457-1616
June	737-880	December	1617-1776

Journal of Spacecraft and Rockets (Vol. 11, 1974)

Issue	Pages	Issue	Pages
January	1-64	July	449-544
February	65-128	August	545-608
March	129-208	September	609-672
April	209-272	October	673-736
May	273-352	November	737-800
June	353-448	December	801-864

Journal of Aircraft (Vol. 11, 1974)

Issue	Pages	Issue	Pages
January	1-64	July	369-432
February	65-128	August	433-496
March	129-192	September	497-592
April	193-256	October	593-656
May	257-304	November	657-720
June	305-368	December	721-784

Journal of Hydronautics (Vol. 8, 1974)

Issue	Pages	Issue	Pages
January	1-44	July	77-124
April	45-76	October	125-172

Progress in Astronautics and Aeronautics (Vols. 32-35, 1974)

Astronautics & Aeronautics (Vol. 12, 1974; Each issue starts with page 1; month and page are given for each entry in the indexes.)

SYN, SA, TN, EN, TC, and ERR indicate Synoptic, Survey Article, Technical Note, Engineering Note, Technical Comment, and Errata, respectively. All other items are regular full-length articles. The initials of the publication in which the paper was published are in parentheses at the end of each entry. In the Subject Index, papers are listed alphabetically by title, regardless of publication or category.

Table of Contents

Page

List of Subject Index Topic Titles 2

Subject Index 4

Author Index 34

LIST OF SUBJECT INDEX TOPIC TITLES

AIRCRAFT TECHNOLOGY, CONVENTIONAL

Aircraft Aerodynamics (Including Component Aerodynamics) 4
Aircraft Cabin Environment and Life Support Systems 4
Aircraft Configuration Design 4
Aircraft Crew Training 4
Aircraft Deceleration Systems 4
Aircraft Economics (Including System Economics) 4
Aircraft Fabrication 5
Aircraft Flight Operations 5
Aircraft Fuels and Fuel Systems 5
Aircraft Gust Loading and Wind Shear 5
Aircraft Handling, Stability, and Control 5
Aircraft Landing Dynamics 5
Aircraft Navigation, Communication, and Traffic Control 5
Aircraft Noise, Aerodynamics (Including Sonic Boom 5
Aircraft Noise, Powerplant 6
Aircraft Performance 6
Aircraft Powerplant Design and Installation 6
Aircraft Structural Design (Including Loads) 6
Aircraft Structural Materials 6
Aircraft Subsystem Design 6
Aircraft Testing (Including Component Wind Tunnel Testing) 7
Aircraft Vibration 7
Air Transportation Systems 7
General Aviation Systems 7
Ground Support Systems 7
Military Aircraft Missions 7

AIRCRAFT TECHNOLOGY, VTOL

Ground (or Water-Surface) Effect Machines 7
Rotary Wing Aerodynamics 7
VTOL Aircraft Design 8
VTOL Cabin Habitability and Design 8
VTOL Flight Operations 8
VTOL Ground Support Systems 8
VTOL Handling, Stability, and Control 8
VTOL Landing Dynamics 8
VTOL Missions and Transportation Systems 8
VTOL Powerplant Design and Installation 8
VTOL Structural Design (Including Loads) 8
VTOL Testing 8
VTOL Vibration 8

FLUID DYNAMICS

Boundary Layers and Convective Heat Transfer—Laminar 8
Boundary-Layers and Convective Heat Transfer—Turbulent 9
Boundary-Layer Stability and Transition 10
Hydrodynamics 10
Jets, Wakes, and Viscid-Inviscid Flow Interactions 10
Multiphase Flows 11
Nonsteady Aerodynamics 11
Nozzle and Channel Flow 12
Plasma Dynamics and MHD 13
Radiatively Coupled Flows and Heat Transfer 13
Rarefield Flows 13
Reactive Flows 13
Shock Waves and Detonations 14
Subsonic and Transonic Flow 14
Supersonic and Hypersonic Flow 15
Viscous Nonboundary-Layer Flows 16
Wave Motion and Sloshing 16

INTERDISCIPLINARY TOPICS

Aerospace Management 16
Aerospace Technology Utilization 16
Atmospheric, Space, and Oceanographic Sciences 17
Checkout Systems 17
Computer Technology and Computer Simulation Techniques 17
Electric Power Generation Research 17
Lasers 18
Law, History, Policy, and Sociology 18
Navigation, Control, and Guidance Theory 18
Reliability, Quality Control, and Maintainability 18
Research Facilities and Instrumentation 19
Safety 19

LAUNCH VEHICLE AND MISSILE (LV/M) TECHNOLOGY

LV/M Aerodynamic Heating 19
LV/M Aerodynamics 19
LV/M Configurational Design 19
LV/M Dynamics and Control 19
LV/M Dynamics, Uncontrolled 19
LV/M Fabrication 20
LV/M Flight Testing 20
LV/M Fuel and Propellant Systems (Including Storage and Transfer) 20
LV/M Guidance Systems (Including Command and Information Systems) 20
LV/M Gust Loading and Wind Shear 20
LV/M Mission Studies and Economics 20
LV/M Propulsion System Integration 20
LV/M Simulation 20
LV/M Structural Design (Including Loads) 20
LV/M Subsystem Design 20
LV/M System and Component Ground Testing 20
LV/M Trajectories 20
Launch Vehicle Systems (Including Ground Support) 20
Missile Systems 20
Sounding Rocket Systems 20
Tracking Systems 20

MARINE TECHNOLOGY

Marine Electric Power Systems 21
Marine Hydrodynamics, Vessel and Control Surface 21
Marine Materials, Corrosion/Erosion 21
Marine Mooring Systems and Cable Mechanics 21
Marine Propulsion System Integration 21
Marine Vessel Design (Including Loads) 21
Marine Vessel Systems, Submerged 21
Marine Vessel Systems, Surface 21
Marine Vessel Trajectories, Stability, and Control 21
Marine Vessel Vibration 21
Oceanography, Physical and Biological 21
Propulsion System Hydrodynamics 21
Sea Pollution Containment and Control 21
Undersea Acoustics 21

Undersea Communication 21
Undersea Extra-Vehicular Activity 21
Undersea Habitability and Life Support Systems 21
Undersea Medicine (Including Psychology, Pressure Effects, etc.) 21
Undersea Mining Systems 21

PROPULSION

Airbreathing Engine Testing 21
Airbreathing Propulsion, Hypersonic 22
Airbreathing Propulsion, Subsonic and Supersonic 22
Combustion in Gases 22
Combustion in Heterogeneous Media 22
Combustion Stability, Ignition, and Detonation 23
Electric and Advanced Space Propulsion 23
Fuels and Propellants, Properties of 23
Liquid Rocket Engines 24
Marine Propulsion 24
Nuclear Propulsion 24
Rocket Engine Testing 24
Solid and Hybrid Rocket Engines 24

SPACECRAFT TECHNOLOGY

Data Sensing and Presentation or Transmission Systems 24
Earth-Orbital Trajectories 24
Earth Satellite Systems, Unmanned 24
Entry Deceleration Systems and Flight Mechanics (e.g. Parachutes) 25
Entry Vehicle Dynamics and Control 25
Entry Vehicles and Landers 25
Entry Vehicle Mission Studies and Flight Mechanics 25
Entry Vehicle Testing 25
Extraterrestrial Surface Transportation 25
Extra-Vehicular Activity 25
Lunar and Interplanetary Spacecraft Systems, Manned 25
Lunar and Interplanetary Spacecraft Systems, Unmanned 25
Lunar and Interplanetary Trajectories 26
Meteoroid Protection Systems 26
Radiation Protection Systems 26
Spacecraft Attitude Dynamics and Control 26
Spacecraft Communication Systems 26
Spacecraft Configurational and Structural Design (Including Loads) 27
Spacecraft Electric Power Systems 27
Spacecraft Flight Testing 27
Spacecraft Ground Testing and Simulation (Including Components) 27
Spacecraft Habitability and Life Support Systems 27
Spacecraft Mission Studies and Economics 27
Spacecraft Navigation, Guidance, and Flight-Path Control Systems 27
Spacecraft Propulsion Systems Integration 28
Spacecraft Sterilization 28
Spacecraft Temperature Control Systems 28
Spacecraft Tracking 28
Space Crew Training 28
Space Medicine (Including Weightlessness, Radiation Effects, Psychology, etc) 28
Space Station Systems, Manned 28

STRUCTURAL MECHANICS AND MATERIALS

Aeroelasticity and Hydroelasticity 28
Hypervelocity Impact 29
Materials, Properties of 29
Structural Composite Materials (Including Coatings) 29
Structural Design, Optimal 29
Structural Dynamic Analysis 30
Structural Stability Analysis 31
Structural Static Analysis 31
Thermal Stresses 31

THERMOPHYSICS AND THERMOCHEMISTRY

Atomic, Molecular, and Plasma Properties 32
Heat Conduction 32
Liquid and Solid Thermophysical Properties 32
Material Ablation 32
Radiation and Radiative Heat Transfer 32
Thermal Modeling and Experimental Thermal Simulation 33
Thermal Surface Properties 33
Thermochemistry and Chemical Kinetics 33

SUBJECT INDEX

AIRCRAFT TECHNOLOGY, CONVENTIONAL

Aircraft Aerodynamics (Including Component Aerodynamics)

Analysis of embedded shock waves calculated by relaxation methods. Earll M. Murman (AIAA J) 626

——Comment on "Analysis of embedded shock waves calculated by relaxation methods." Tsze C. Tai (AIAA J) 735

——Reply by author to T. C. Tai. Earll M. Murman (AIAA J) 736

Analysis of high-aspect ratio jet-flap wings of arbitrary geometry. P. B. S. Lissaman (JA) 259

Boundary-layer theory for pressure and drag of a wavy surface. Kenneth H. Rogers (JA) 382

Calculation of aircraft wake velocity profiles and comparison with experimental measurements. Coleman duP. Donaldson, Richard S. Snedeker, and Roger D. Sullivan (JA) 547

Calculation of initial vortex roll-up in aircraft wakes. John E. Yates (JA) 397

Comment on "A finite-element method for calculating aerodynamic coefficients of a subsonic airplane." William P. Rodden, Joseph P. Giesling, Terez P. Kalman, and Jack C. Rowan (JA, TC) 366

——Reply by author to W. P. Rodden, J. P. Giesing, T. P. Kalman, and J. C. Rowan. Hsichun M. Hua (JA, TC) 367

Comment on "Correlation of wing-body combination lift data." Alexander H. Flax (JA, TC) 303

Conceptual study of leading-edge-vortex enhancement by blowing. A. R. G. Bradley and W. O. Wray (JA) 33

Design and operation of aircraft to minimize their sonic boom. A. R. Seebass and A. R. George (JA) 509

Effect of upper-surface blowing on static longitudinal stability of a swept wing. Paul L. Coe Jr. and D. Kulla (JA) 537

Evaluation of drag integral using cubic splines. R. M. James and V. D. Panico (JA, EN) 494

Extension of a vortex-lattice method to include the effects of leading-edge separation. D. T. Mook and S. A. Maddox (JA, EN) 127

External-store loads using nonplanar lifting surface theory. William R. Chadwick (JA) 181

F-12 series aircraft aerodynamic and thermodynamic design in retrospect. Ben R. Rich (JA) 401

Flow separation over axisymmetric afterbody models. Walter M. Presz Jr. and Edward T. Pitkin (JA) 677

Incompressible potential flow solutions for arbitrary bodies of revolution. William L. Oberkampf and Leon E. Watson Jr. (AIAA J, TN) 409

Influence of flaps and engines on aircraft wake vortices. David C. Burnham and Thomas E. Sullivan (JA, EN) 591

Laminar stall prediction and estimation of $C_{l_{max}}$. Suresh H. Goradia and Victor Lyman (JA) 528

Laser anemometer measurements of surface pressure distributions. S. J. Barker and H. W. Liepmann (AIAA J, TN) 1758

Lifting-surface theory for a semi-infinite wing in oblique gust. Sing Chu and Sheila E. Widnall (AIAA J) 1672

Lifting-surface theory for an oscillating T-Tail. Koji Isogai (AIAA J) 28

Lifting surface theory of axial compressor blade rows: Part I—Subsonic compressor. Olufemi Okurounmu and James E. McCune (AIAA J) 1363

——Lifting surface theory of axial compressor blade rows: Part II—Transonic compressor. Olufemi Okurounmu and James F. McCune (AIAA J) 1372

Methods for the design and analysis of jet-flapped airfoils. N. D. Halsey (JA) 540

Method of orthogonal loadings—A fresh look. Rajendra K. Bera and S. M. Ramachandra (JA, EN) 650

Minimum induced drag of semi-elliptic ground effect wing. Hiroshi Mamada and Shigenori Ando (JA, SYN) 257

On calculation of induced drag and conditions downstream of a lifting wing. W. R. Sears (JA, EN) 191

Oscillatory supersonic kernel function method for interfering surfaces. Atlee M. Cunningham Jr. (JA) 664

Oscillatory supersonic kernel function method for isolated wings. Atlee M. Cunningham Jr. (JA) 609

Potential flow past annular aerofoils. V. Krishnamurthy and N. R. Subramanian (JA) 712

Quasi-vortex-lattice method in thin wing theory. A. C. Edward Lan (JA) 518

Recent advances in aerodynamics for transport aircraft. Part II. Lloyd T. Goodmanson and Louis B. Gratzer (A/ A, January) 52

Roll-up of aircraft trailing vortices using artificial viscosity. A. M. Bloom and H. Jen (JA, EN) 714

Shock capturing numerical method for calculating supersonic flows. F. Walkden, G. T. Laws, and P. Caine (AIAA J) 642

Slender delta wing with conical camber. Rajendra K. Bera (JA, EN) 245

Some characteristics of airfoil-jet interaction with Mach number nonuniformity. C. Edward Lan (JA, EN) 491

Some remarks on the solution of the lifting line equation. Rajendra K. Bera (JA, EN) 647

Supersonic flow in the corner formed by two intersecting wedges. Paul Kutler (AIAA J, SYN) 577

Toward a second-generation supersonic transport. Laurence K. Loftin Jr. (JA) 3

Trailing vortex effects on following aircraft. James D. Iversen and Shmuel Bernstein (JA, EN) 60

Transonic inviscid flow over lifting airfoils by the method of integral relations. Tsze Cheng Tai (AIAA J) 798

Vortex measurements behind a swept wing transport model. K. L. Orloff and D. L. Ciffone (JA, EN) 362

Vorticity associated with a jet in a cross flow. Richard Fearn and Robert P. Weston (AIAA J) 1666

Warping of delta wings for minimum drag. Rajendra K. Bera (JA, EN) 777

Water tank study of the decay of trailing vortices. Dietrich K. Lezius (AIAA J) 1065

Aircraft Cabin Environment and Life Support Systems

In-flight oxygen generation for aircraft breathing systems. Edward J. Boscola (JA) 444

Aircraft Configuration Design

Aft-end design techniques for twin-engine fighters. Edsel R. Glasgow and Don M. Santman (JA) 39

Air Force concepts for RPV application. John A. Palmer (A/ A, Oct.) 52

Application of computer-aided aircraft design in a multidisciplinary environment. Robert E. Fulton, J. Sobieszczanski, O. Storaasli, Emma Jean Landrum, and D. Loendorf (JA, SYN) 369

Comment on "A finite-element method for calculating aerodynamic coefficients of a subsonic airplane." William P. Rodden, Jeseph P. Giesing, Terez P. Kalman, and Jack C. Rowan (JA, TC) 366

——Reply by author to W. P. Rodden, J. P. Giesing, T. P. Kalman, and J. C. Rowan. Hsichun M. Hua (JA, TC) 367

Handling qualities effects on precision weapons delivery. G. Warren Hall, Norman C. Weingarten, and Jerry L. Lockenour (JA, SYN) 497

Integrated airframe-nozzle performance for designing twin-engine fighters. E. R. Glasgow (JA) 354

Managerial implications of computerized aircraft design synthesis. William L. Straub Jr. (JA) 129

Recent advances in aerodynamics for transport aircraft. Part II. Lloyd T. Goodmanson and Louis B. Gratzer (A/ A, January) 52

Recent contributions to experiments on cylindrical shell panel flutter. W. Horn, G. Barr, L. Carter, and R. Stearman (AIAA J) 1481

Remotely piloted vehicles for the Army. Vitalij Garber (A/ A, Oct.) 46

RPRVs: The first and future flights. R. Dale Reed (A/ A, April) 26

RPV potential for naval applications. Curtis V. Bryan and James H. Pennington (A/ A, Oct.) 58

Transonic transport wings—Oblique or swept? Robert T. Jones and James W. Nisbet (A/ A, January) 40

Aircraft Crew Training

An optimized video output from a wide angle optical probe. J. A. Mays and R. E. Holms (JA, EN) 124

Visual perception of pilots in carrier landing. Theodore Gold (JA) 723

Aircraft Deceleration Systems

Analysis of deployment and inflation of large ribbon parachutes. D. F. McVey and D. F. Wolf (JA) 96

Parachute mortar design. James E. Pleasants (JSR) 246

Simplified dynamic model of parachute inflation. A. Dean Wolf (JA) 28

Subsonic flow into a downstream facing inlet. Theo G. Keith Jr. (JA, EN) 251

Aircraft Economics (Including System Economics)

Aeroplanes for the eighties. Stephen Wheatcroft (A/ A, March) 34

Airline airplanes for the eighties—A response. Jack Steiner (A/ A, March) 42

Concorde: Testing the market. Richard D. FitzSimmons (A/ A, July-August) 46

Engine aids and the metrologist syndrome. H. M. Snowball (PS, V. 34) 505

High-low mix—Solution or problem? George Spangenberg (A/ A, Sept.) 18

High-performance composite material airframe weight and cost estimating relations. Donald F. Adams (JA) 751

Mini-RPVs: Big potential, small cost. Kent Kresa and William F. Kirlin (A/ A, Sept.) 48
Rating aircraft on energy. Dal V. Maddalon (A/ A, Dec.) 26

Aircraft Fabrication

Analysis of bonded joints in vehicular structures. Richard M. Barker and Fritz Hatt (AIAA J, ERR) 1168

Aircraft Flight Operations

Automatic control of adverse yaw in the landing environment using optimal control theory. David Bischoff, Robert Duffy, and Howard Kaufman (JA, SYN) 499
Aircraft 4-D constant velocity control system. Edwin C. Foudriat (JA) 326
Command and control challenge for RPVs. Starr J. Colby, Charles E. Franklin, and Dougal W. S. Prins (A/ A, Sept.) 64
Computer simulation of near midair collisions in the terminal environment. Richard B. Jones and Frederick H. Lutze Jr. (JA) 457
Engine sensory requirements for energy management. I. A. Carnegis (PS, V. 34) 419
Generalized quasi-linearization method. D. K. Scharmack and N. R. Sandell Jr. (AIAA J) 1236
RPVs—Exploring civilian applications. Thomas J. Gregory, Rodney O. Bailey, and Walter P. Nelms (A/ A, Sept.) 38
Study of control system effectiveness in alleviating vortex wake upsets. Walter A. Johnson, Gary L. Teper, and Herman A. Rediess (JA) 148
Visual perception of pilots in carrier landing. Theodore Gold (JA) 723

Aircraft Fuels and Fuel Systems

AIAA holds fuel-saving session. Jerry Grey (A/ A, May) 52
Case for hydrogen-fueled transport aircraft, The. G. Daniel Brewer (A/ A, May) 40
Cavity growth and collapse phase of hydraulic ram. G. C. Cardea and P. J. Torvik (JA, EN) 252
Future availability of liquid hydrogen. William J. D. Escher (A/ A, May) 55
Future engines and fuels. Jerry Grey (A/ A, Sept.) 14
New experimental method for the investigation of fuel spray evaporation. A. J. K. S. Wong, R. Sandri, and J. A. Newman (AIAA J) 269
Refining of turbine fuels by modern hydrotreating. Ryden L. Richardson and Bernal Peralta (JA) 771
Simulation of the speed control for gas turbines using vibrating reed regulators. Jacques Dat, Jean Fabre, and Liber Sanjurjo (JA) 624

Aircraft Gust Loading and Wind Shear

Generalized quasi-linearization method. D. K. Scharmack and N. R. Sandell Jr. (AIAA J) 1236
Passage of a swept airfoil through an oblique gust. John J. Adamczyk (JA) 281
Shear and moment response of the airplane wing to nonstationary turbulence. Yoshinori Fujimori (AIAA J, SYN) 1459

Aircraft Handling, Stability, and Control

Automatic control of adverse yaw in the landing environment using optimal control theory. David Bischoff, Robert Duffy, and Howard Kaufman (JA, SYN) 499
Comment on "A finite-element method for calculating aerodynamic coefficients of a subsonic airplane." William P. Rodden, Joseph P. Giesing, Terez P. Kalman, and Jack C. Rowan (JA, TC) 366
——Reply by author to W. P. Rodden, J. P. Giesing, T. P. Kalman, and J. C. Rowan Hsichun M. Hua (JA, TC) 367
Concerning lateral dynamics of flight on a great circle. John E. Cochran Jr. (AIAA J, TN) 557
Design principles for digital autopilot synthesis. Howard Berman and Richard Gran (JA) 414
Development of the F-12 aircraft flight control system. John R. McMaster and Frederick L. Schenk (JA) 225
Digital fly-by-wire: Computers lead the way. Donald C. Fraser and Philip G. Felleman (A/ A, July-August) 24
Direct side force control for STOL crosswind landings. E. M. Boothe and H. J. Ledder (JA) 631
Effect of thrust on the longitudinal oscillations of missiles. E. V. Laitone and Wen-Fan Lin (JSR, EN) 121
Evaluation of spoilers for light aircraft flight path control. David L. Kohlman and Carl H. Brainerd (JA) 449
Explicit model following control scheme incorporating integral feedback. Igal Tiroshi and Jarrell R. Elliott (JA, EN) 364
F-12 series aircraft aerodynamic and thermodynamic design in retrospect. Ben R. Rich (JA) 401
Handling qualities effects on precision weapons delivery. G. Warren Hall, Norman C. Weingarten, and Jerry L. Lockenour (JA, SYN) 497
Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, EN) 247
——Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, ERR) 784
Maximum likelihood identification of aircraft stability and control derivatives. Raman K. Mahra, David E. Stepner, and James S. Tyler (JA) 81
On the dynamics of human pilots in marginally controllable systems. Norihiro Goto and Kyuichiro Washizu (AIAA J) 310
Practical aspects of electrostatic stabilization. Ralph Markson (A/ A, April) 44
RPRVs: The first and future flights. R. Dale Reed (A/ A, April) 26
Stability and control of hingeless rotor heicopter ground resonance. Maurice I. Young and David J. Bailey (JA) 333
Stability limits for downsprings. Gottfried Sachs (JA, EN) 710
Static aeroelasticity and the flying wing, revisited. Terrence A. Weisshaar and Holt Ashley (JA, EN) 718
Study of control system effectiveness in alleviating vortex wake upsets. Walter A. Johnson, Gary L. Teper, and Herman A. Rediess (JA) 148
Study of wind effects on electrostatic autopilots. Edmund Sullivan Jr. (JA) 221
——Comment on "Wind effects on electrostatic autopilots." Maynard L. Hill and William A. Hoppel (JA, TC) 781
——Reply by author to M. L. Hill and W. A. Hoppel. Edmund Sullivan Jr. (JA, TC) 782
Synthesis of a separate surface wing leveler. Jan Roskam and Samuel Henry (JA, SYN) 657
Transfer function synthesis by state vector feedback. Peter Murdoch (AIAA J, TN) 1765
Wind-tunnel investigation of a B-52 model flutter suppression system. L. T. Redd, J. Gilman Jr., D. E. Cooley, and F. D. Sevart (JA) 659

Aircraft Landing Dynamics

Arrested landing studies for STOL aircraft. Chen-Chung Hsin (JA) 159
Direct side force control for STOL crosswind landings. E. M. Boothe and H. J. Ledder (JA) 631
Drop testing naval aircraft and the VSD landing gear dynamic test facility. C. C. Daughetee (JA) 758
Dynamic properties of aircraft tires. S. K. Clark, R. N. Dodge, and G. H. Nybakken (JA) 166
Evaluation of spoilers for light aircraft flight path control. David L. Kohlman and Carl H. Brainerd (JA) 449

Aircraft Navigation, Communication, and Traffic Control

Acoustic backscatter radar system for tracking aircraft trailing vortices. Martin Balser, Charles A. McNary, and Arthur E. Nagy (JA) 556
Aircraft 4-D constant velocity control system. Edwin C. Foudriat (JA) 326
Command and control challenge for RPVs. Starr J. Colby, Charles E. Franklin, and Dougal W. S. Prins (A/ A, Sept.) 64
Mathematical model of a damped rate-of-climb indicator. D. Adler (JA) 439
OMEGA—Past, present, and future. Robert Sanders (A/ A, April) 50
Optimum skewed redundant inertial navigators. Arthur J. Pejsa (AIAA J) 899
Some aspects of collision avoidance. T. L. Vincent, E. M. Cliff, W. J. Grantham, and W. Y. Peng (AIAA J, SYN) 3
Study on satellite communications for mobiles. Y. Hirata, M. Kyogoku, and E. Isomura (PS, V. 32) 249

Aircraft Noise, Aerodynamics (Including Sonic Boom)

Analysis of sonic boom flight test measurements near the shock wave extremity. G. T. Haglune and E. J. Kane (JA) 745
British contribution to structural response to noise. B. L. Clarkson (JA) 697
Design and operation of aircraft to minimize their sonic boom. A. R. Seebass and A. R. George (JA) 509
Engine-over-the-wing noise research. Meyer Reshotko, Jack H. Goodykoontz, and Robert G. Dorsch (JA, SYN) 195
Evaluation of jet noise sources by cross-correlation of far field microphone signals. S. P. Parthasarathy (AIAA J) 583
Hot-wire measurements in a supersonic jet at low Reynolds numbers. Dennis K. McLaughlin and Charles J. McColgan (AIAA J, TN) 1279
Investigation of acoustic effects of leading-edge serrations on airfoils. Alan S. Hersh, Paul T. Soderman, and Richard E. Hayden (JA) 197
Lifting surface theory of axial compressor blade rows: Part I—Subsonic compressor. Olufemi Okurounmu and James E. McCune (AIAA J) 1363
——Lifting surface theory of axial compressor blade rows: Part II—Tran-

sonic compressor. Olufemi Okurounmu and James E. McCune (AIAA J) 1372
Maximum noise abatement trajectories. Saydean Zeldin and Jason Speyer (JA, EN) 119
Minimum noise climbout trajectories of a VTOL aircraft. Frohmut Henschel, Ermin Plaetschke, and Hans-Kurt Schulze (JA, EN) 429
On the accuracy of Whitham's method. G. I. Zahalak and M. K. Myers (AIAA J) 203
Pressure sources for a wave model of jet noise. Y. Y. Chan (AIAA J, TN) 241
Putting all our noise technology to work. Roy P. Jackson (A/ A, January) 48
Recent advances in aerodynamics for transport aircraft. Part II. Lloyd T. Goodmanson and Louis B. Gratzer (A/ A, January) 52
Role of jet stability in edgetone generation. James P. Woolley and K. Karamcheti (AIAA J) 1457
Transonic transport wings—Oblique or swept? Robert T. Jones and James W. Nisbet (A/ A, January) 40

Aircraft Noise, Powerplant

Attenuation of instabilities in propulsion system combustors. Harold T. Couch and Leonard S. Cohen (JA) 571
Designing small gas turbine engines for low noise and clean exhaust. H. C. Eatock, J. C. Plucinsky, and J. A. Saintsbury (JA) 616
Effect of bulk-reacting liners on wave propagation in ducts. Ali Hasan Nayfeh, John Sun, and Demetri P. Telionis (AIAA J) 838
Effect of inlet turbulence on compressor noise. B. Robbins and B. Lakshminarayana (JA) 273
Engine-over-the-wing noise research. Meyer Reshotko, Jack H. Goodykoontz, and Robert G. Dorsch (JA, SYN) 195
Investigation of acoustic effects of leading-edge serrations on airfoils. Alan S. Hersh, Paul T. Soderman, and Richard E. Hayden (JA) 197
Lifting surface theory of axial compressor blade rows: Part I— Subsonic compressor. Olufemi Okurounmu and James E. McCune (AIAA J) 1363
——Lifting surface theory of axial compressor blade rows: Part II—Transonic compressor. Olufemi Okurounmu and James E. McCune (AIAA J) 1372
Noise characteristics of a turbulent crosswind jet. John E. Cole III (AIAA J) 198
Noise characteristics of combustion augmented jets at midsubsonic speeds. A. N. Abdelhamid, D. T. Harrje, E. G. Plett, and M. Summerfield (AIAA J) 336
Toward a second-generation supersonic transport. Laurence K. Loftin Jr. (JA) 3
Turbulence and acoustic characteristics of screen perturbed jets. Roger E. A. Arndt, Nam C. Tran, and Galen Barefoot (AIAA J, SYN) 261

Aircraft Performance

Aft-end design techniques for twin-engine fighters. Edsel R. Glasgow and Don M. Santman (JA) 39
Analysis of high-aspect ratio jet-flap wings of arbitrary geometry. P. B. S. Lissaman (JA) 259
Engine sensory requirements for energy management. I. A. Carnegis (PS, V. 34) 419
F-12 series aircraft propulsion system performance and development. David H. Campbell (JA) 670
Fuel optimality of cruise. Robert L. Schultz (JA, EN) 586
Integrated airframe-nozzle performance for designing twin-engine fighters. E. R. Glasgow (JA) 354
Minimum induced drag of semi-elliptic ground effect wing. Hiroshi Mamada and Shigenori Ando (JA, SYN) 257
Minimum time and minimum fuel flight path sensitivity. M. A. Nichols and J. Karl Hedrick (JA) 320
S-3A—A new dimension in airborne sea control. R. R. Heppe, L. E. Channel, And C. W. Cook (JA) 577
Some aspects of airfoil stall in low-speed flow. Hsiao C. Kao (JA) 177
Toward a second-generation supersonic transport. Laurence K. Loftin Jr. (JA) 3

Aircraft Powerplant Design and Installation

F-12 series aircraft propulsion system performance and development. David H. Campbell (JA) 670
Future engines and fuels. Jerry Grey (A/ A, Sept.) 14
Ground testing and simulation—An overview: Part III: Flight simulation. Philip A. Reynolds (A/ A, July-August) 58
Ground testing and simulation—An overview: Part IV: Propulsion testing. Michael Pindzola (A/ A, July-August) 63
Impact of emission regulations on future gas turbine engine combustors. F. J. Verkamp, A. J. Verdouw, and J. G. Tomlinson (JA) 340
Turbine blade pyrometer system in the control of the Concorde engine. K. R. Curwen (PS, V. 34) 399

Aircraft Structural Design (Including Loads)

Advanced beaded and tubular structural panels. Max D. Musgrove, Bruce E. Greene, John L. Shideler, and Herman L. Bohon (JA) 68
Application of computer-aided aircraft design in a multidisciplinary environment. Robert E. Fulton, J. Sobieszczanski, O. Storaasli, Emma Jean Landrum, and D. Loendorf (JA, SYN) 369
British contribution to structural response to noise. B. L. Clarkson (JA) 697
Cavity growth and collapse phase of hydraulic ram. G. C. Cardea and P. J. Torvik (JA, EN) 252
Comment on "Finite element structural analysis of local instability." W. H. Wittrick (AIAA J, TC) 123
——Reply by author to W. H. Wittrick. J. S. Przemieniecki (AIAA J, TC) 124
Drop testing naval aircraft and the VSD landing gear dynamic test facility. C. C. Daughetee (JA) 758
Fatigue—A test integrated damage modeling approach. Darrell Simpkins, Robert L. Neulieb, and Dennis J. Golden (JA) 563
Fatigue crack delay and arrest due to single peak tensile overloads. E. P. Probst and B. M. Hillberry (AIAA J) 330
Fracture mechanics. Herbert F. Hardrath (JA, Dryden Research Lecture) 305
Frequency determination from similarity considerations. Stanley E. Hillard (JA, EN) 651
Hodographic prediction of cyclic creep behavior. A. Berkovits (JA) 10
Improved approximation of constitutive elasto-plastic stress-strain relationship for finite element analysis. T. R. Hsu and A. W. M. Bertels (AIAA J, TN) 1450
Incremented flutter analysis. R. F. O'Connell (JA) 236
Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, EN) 247
——Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, ERR) 784
Penny-shaped crack in a linear viscoelastic medium under torsion. Purna N. Kaloni and Raymond Smith (AIAA J, TN) 1745
Preliminary design of aircraft structures to meet structural integrity requirements. J. C. Ekvall, T. R. Brussat, A. F. Liu, and Matthew Creager (JA) 136
Programing approach to optimal structural design using structural indices, A. Leonard Spunt (AIAA J, TN) 865
Reliability analysis of aircraft structures under random loading and periodic inspection. J.-N. Yang and W. J. Trapp (AIAA J) 1623
Reliability and quality control of production engineering computer programs. S. D. Hansen and Q. D. McHarg (JA) 232
Shell instability analysis applied to a radome. Terry L. Janssen and Thomas G. Swaney (AIAA J, TN) 714
Stress diffusion in thick stiffened panels. Grant P. Steven (JA, EN) 779
Transonic transport wings—Oblique or swept? Robert T. Jones and James W. Nisbet (A/ A, January) 40

Aircraft Structural Materials

Advanced composites. Alan M. Lovelace (JA, von Karman Lecture) 501
Analysis of longitudinal thickness—shear stiffness of a monolayer filamentary composite. S. Chang and C. W. Bert (AIAA J) 1358
Crack in a thin infinite plate of viscoelastic medium. Satyanarayan Mandal (AIAA J, TN) 233
Fatigue—A test integrated damage modeling approach. Darrell Simpkins, Robert L. Neulieb, and Dennis J. Golden (JA) 563
Fatigue crack delay and arrest due to single peak tensile overloads. E. P. Probst and B. M. Hillberry (AIAA J) 330
Fracture mechanics. Herbert F. Hardrath (JA, Dryden Research Lecture) 305
High-performance composite material airframe weight and cost estimating relations. Donald F. Adams (JA) 751
Hodographic prediction of cyclic creep behavior. A. Berkovits (JA) 10
Penny-shaped crack in a linear viscoelastic medium under torsion. Purna N. Kaloni and Raymond Smith (AIAA J) 1745
X2048, a high strength, high toughness aluminum alloy for aircraft applications. S. A. Levy, R. E. Zinkham, and G. E. Spangler (JA) 202

Aircraft Subsystem Design

Development of the F-12 aircraft flight control system. John R. McMaster and Frederick L. Schenk (JA) 225
Mathematical model of a damped rate-of-climb indicator. D. Adler (JA) 439

S-3A—A new dimension in airborne sea control. R. R. Heppe, L. E. Channel, and C. W. Cook (JA) 577

Aircraft Testing (Including Component Wind Tunnel Testing)

Comment on "A criterion for assessing wind-tunnel wall interference at Mach 1." Earll M. Murman and Frank W. Steinle Jr. (JA, TC) 782
——Reply by author to E. M. Murman and F. W. Steinle Jr. Theodore R. Goodman (JA, TC) 783
Drop testing naval aircraft and the VSD landing gear dynamic test facility. C. C. Daughetee (JA) 758
Effect of transducer diameter on resolution of total pressure fluctuations in a turbulent flows. W. G. Steenken (PS, V. 34) 167
Engine condition monitor system to detect foreign object damage and crack development. H. R. Hegner (PS, V. 34) 531
Experimental studies of a Ludweig tube high Reynolds number transonic tunnel. R. F. Starr and C. J. Schueler (AIAA J, SYN) 267
Flight simulation characteristics of the Langley high Reynolds number cryogenic transonic tunnel. Robert A. Kilgore, Jerry B. Adcock, and Edward J. Ray (JA) 593
Flutter test analysis in the time domain using a recursive system representation. Jan Robert Wright (JA, EN) 774
Ground testing and simulation—An overview: Part I: Economics. Jack D. Whitfield (A/ A, June) 54
Ground testing and simulation—An overview: Part II: Aerodynamic testing. Bain Dayman Jr. and Anthony W. Fiore (A/ A, June) 56
Ground testing and simulation—An overview: Part III: Flight simulation. Philip A. Reynolds (A/ A, July-August) 58
Ground testing and simulation—An overview: Part IV: Propulsion testing. Michael Pindzola (A/ A, July-August) 63
Inlet distortion evaluation from limited high-response instrumentation. Stanley H. Ellis and Barry J. Brownstein (JA) 112
Instrumentation for in-flight determination of steady-state and dynamic inlet performance in supersonic aircraft. R. H. Smith and F. W. Burcham Jr. (PS, V. 34) 41
Langley cryogenic high Reynolds number wind-tunnel program, The. E. C. Polhamus, R. A. Kilgore, J. B. Adcock, and E. J. Ray (A/ A, Oct.) 30
On multiple-shaker resonance testing. R. R. Craig Jr. and Y.-W. T. Su (AIAA J) 924
Research instrumentation requirements for flight/ wind-tunnel tests of the YF-12 propulsion system and related flight experience. William G. Schweikhard and Earl J. Montoya (PS, V. 34) 19
RPRVs: The first and future flights. R. Dale Reed (A/ A, April) 26
System for evaluation of F-15 inlet dynamic distortion. A. P. Farr and G. A. Schumacher (PS, V. 34) 59
Transonic wind-tunnel and flight buffet pressures on a swept wing. C. E. Lemley and R. E. Mullans (JA) 173

Aircraft Vibration

Automated method for determining the flutter velocity and the matched point, An. Kumar G. Bhatia (JA) 21
Automated procedure for computing flutter eigenvalues, An. Robert N. Desmarais and Robert M. Bennett (JA) 75
Average structural response to locally stationary random excitation. Peter D. Schmitz and Neil P. McManus (AIAA J, TN) 229
Axisymmetric vibration of circular sandwich plates. Shaukat Mirza and Anand V. Singh (AIAA J, TN) 1418
British contribution to structural response to noise. B. L. Clarkson (JA) 697
Design of missile-aircraft component white noise isolators. Anthony San Miguel (JA) 704
Determination of bending influence coefficients from bending slope data. Henry E. Fettis (AIAA J, TN) 112
Flutter test analysis in the time domain using a recursive system representation. Jan Robert Wright (JA, EN) 774
Frequency determination from similarity considerations. Stanley E. Hillard (JA, EN) 651
Generalization of Dunkerley's formula for finding the lowest critical velocity of rotating shafts. Bruno Atzori (JA, EN) 648
Minimization method for treating convergence in modal synthesis, A. T. K. Hasselman and Gary C. Hart (AIAA J) 316
On multiple-shaker resonance testing. R. R. Craig Jr. and Y.-W. T. Su (AIAA J) 924
Probability of first passage failure for stationary random vibration. J. B. Roberts (AIAA J) 1636
Shear and moment response of the airplane wing to nonstationary turbulence. Yoshinori Fujimori (AIAA J, SYN) 1459
Stability and control of hingeless rotor helicopter ground resonance. Maurice I. Young and David J. Bailey (JA) 333
Variations of eigenvalues and eigenfunctions in continuum mechanics. Mehdi Farshad (AIAA J, TN) 560
Wind-tunnel investigation of a B-52 model flutter suppression system. L. T. Redd, J. Gilman Jr., D. E. Cooley, and F. D. Sevart (JA) 659

Air Transportation Systems

Aeroplanes for the eighties. Stephen Wheatcroft (A/ A, March) 34
AIAA holds fuel-saving session. Jerry Grey (A/ A, May) 52
Airline airplanes for the eighties—A response. Jack Steiner (A/ A, March) 42
Airship can meet the energy challenge, The. J. Gordon Vaeth (A/ A, February) 25
Case for hydrogen-fueled transport aircraft, The. G. Daniel Brewer (A/ A, May) 40
Concorde: Testing the market. Richard D. FitzSimmons (A/ A, July-August) 46
Putting all our noise technology to work. Roy P. Jackson (A/ A, January) 48
Rating aircraft on energy. Dal V. Maddalon (A/ A, Dec.) 26
Remotely piloted mini-blimps for urban applications. Gerald R. Seeman, Gordon L. Harris, Glen J. Brown, and Charles A. Cullian (A/ A, February) 31
RPVs—Exploring civilian applications. Thomas J. Gregory, Rodney O. Bailey, and Walter P. Nelms (A/ A, Sept.) 38
Simple active aerodynamic suspension systems for high-speed ground vehicles. E. P. Nolte, R. O. Stearman, and P. E. Russell (JA) 690
Zeppelins? Not again! Walter P. Maiersperger (A/ A, February) 28

General Aviation Systems

Evaluation of spoilers for light aircraft flight path control. David L. Kohlman and Carl H. Brainerd (JA) 449
Synthesis of a separate surface wing leveler. Jan Roskam and Samuel Henry (JA, SYN) 657

Ground Support Systems

Growing procedural problems of washing mammoth aircraft. H. J. Singletary (JA, EN) 587
Simple active aerodynamic suspension systems for high-speed ground vehicles. E. P. Nolte, R. O. Stearman, and P. E. Russell (JA) 690

Military Aircraft Missions

Air Force concepts for RPV application. John A. Palmer (A/ A, Oct.) 52
Cavity growth and collapse phase of hydraulic ram. G. C. Cardea and P. J. Torvik (JA, EN) 252
Command and control challenge for RPVs. Starr J. Colby, Charles E. Franklin, and Dougal W. S. Prins (A/ A, Sept.) 64
F-12 series aircraft aerodynamic and thermodynamic design in retrospect. Ben R. Rich (JA) 401
High-low mix—Solution or problem? George Spangenberg (A/ A, Sept.) 18
Mini-RPVs: Big potential, small cost. Kent Kresa and William F. Kirlin (A/ A, Sept.) 48
Remotely piloted vehicles for the Army. Vitalij Garber (A/ A, Oct.) 46
RPV potential for naval applications. Curtis V. Bryan and James H. Pennington (A/ A, Oct.) 58
S-3A—A new dimension in airborne sea control. R. R. Heppe, L. E. Channel, and C. W. Cook (JA) 577

AIRCRAFT TECHNOLOGY, VTOL

Ground (or Water-Surface) Effect Machines

Minimum induced drag of semi-elliptic ground effect wing. Hiroshi Mamada and Shigenori Ando (JA, SYN) 257
Reduction of TACV power requirements by multiple-stage air cushions. William R. Eberle (JA) 154

Rotary Wing Aerodynamics

Instantaneous velocity measurements in the near wake of a helicopter rotor. Christian Maresca, Daniel Favier, and Jean Rebont (AIAA J, TN) 1165
Optimum propeller in viscous flow. Ole Fanoe (JA, EN) 241
Passage of a swept airfoil through an oblique gust. John J. Adamczyk (JA) 281
Pitch damping of helicopter rotor with nonuniform inflow. Akira Azuma and Yoshiya Nakamura (JA) 639
Sensitivity of rotor blade vibration characteristics to torsional oscillations. Theodore Bratanow and Akin Ecer (JA) 375
Some measurements on dynamic stall. A. G. Parker and J. Bicknell (JA) 371

Spatial correlation method and a time-varying flexible structure. F. Y. M. Wan and C. Lakshmikantham (AIAA J) 700
Theoretical analysis of the aerodynamic stability of multiple, interdigitated helical vortices. B. P. Gupta and R. G. Loewy (AIAA J) 1381

VTOL Aircraft Design

Advanced technology thrust vectoring exhaust systems. J. C. Gill (JA) 764
Cambered Joukowsky airfoil in a nonuniform weak shear flow. A. K. Gupta and S. C. Sharma (JA, EN) 653
Cost of noise reduction in intercity commercial helicopters, The. H. B. Faulkner (JA) 89
Eddy viscosity for variable density coflowing streams. Robert E. Boyle Jr. and Hermann Viets (JA, SYN) 721
Evaluation of hypermixing for thrust augmenting ejectors. Paul M. Bevilaqua (JA) 348
Vorticity associated with a jet in a cross flow. Richard Fearn and Robert P. Weston (AIAA J) 1666

VTOL Cabin Habitability and Design

VTOL Flight Operations

Generalized quasi-linearization method. D. K. Scharmack and N. R. Sandell Jr. (AIAA J) 1236
Minimum noise climbout trajectories of a VTOL aircraft. Frohmut Henschel, Ermin Plaetschke, and Hans-Kurt Schulze (JA, EN) 429

VTOL Ground Support Systems

VTOL Handling, Stability and Control

On the dynamics of human pilots in marginally controllable systems. Norihiro Goto and Kyuichiro Washizu (AIAA J) 310
Pitch damping of helicopter rotor with nonuniform inflow. Akira Azuma and Yoshiya Nakamura (JA) 639

VTOL Landing Dynamics

VTOL Missions and Transportation Systems

Advanced technology thrust vectoring exhaust systems. J. C. Gill (JA) 764
Airship can meet the energy challenge, The. J. Gordon Vaeth (A/ A, February) 25
Cost of noise reduction in intercity commercial helicopters, The. H. B. Faulkner (JA) 89
Remotely piloted mini-blimps for urban applications. Gerald R. Seemann, Gordon L. Harris, Glen J. Brown, and Charles A. Cullian (A/ A, February) 31
Zeppelins? Not again! Walter P. Maiersperger (A/ A, February) 28

VTOL Powerplant Design and Installation

Advanced technology thrust vectoring exhaust systems. J. C. Gill (JA) 764
Test results of a VTOL propulsion concept utilizing a turbofan powered augmentor. D. R. Campbell and B. Quinn (JA) 467

VTOL Structural Design (Including Loads)

Blade torsional tuning to manage large amplitude control loads. R. Gabel and F. Tarzanin Jr. (JA) 460

VTOL Testing

VTOL Vibration

Aeroelastic stability of periodic systems with application to rotor blade flutter. P. Friedmann and L. J. Silverthorn (AIAA J) 1559
Analysis of helicopter rotor blade stall flutter. Peter Crimi (JA) 407
Sensitivity of rotor blade vibration characteristics to torsional oscillations. Theodore Bratanow and Akin Ecer (JA) 375
Spatial correlation method and a time-varying flexible structure. F. Y. M. Wan and C. Lakshmikantham (AIAA J) 700
Study of lifting rotor flapping response peak distribution in atmospheric turbulence, A. G..H. Gaonkar (JA) 104

FLUID DYNAMICS

Boundary Layers and Convective Heat Transfer—Laminar

Additional two-dimensional wake and jet-like flows. James E. Danberg and Kevin S. Fansler (AIAA J, TN) 1432
Approximate method for solving boundary-layer equations. Gambhir M. Shrestha (AIAA J, TN) 382
Calculation of laminar boundary layers on continuous surfaces by Meksyn's method. A. V. Murthy and K. S. Hebbar (AIAA J, TN) 732
Comment on "Unsteady boundary-layer flow of power law fluids." T. Y. Na (AIAA J, TC) 1775
——Reply by author to T. Y. Na. Sreedhan Roy (AIAA J, TC) 1775
Comments on "Solution of nonlinear problems in magnetofluiddynamics and non-Newtonian fluid mechanics through parametric differentation." W. J. Franks (AIAA J, TC) 1455
——Reply by author to W. J. Franks. G. Nath (AIAA J) 1456
Comments on the "Increase of boundary-layer heat transfer by mass injection." Andrzej Wortman (AIAA J, TC) 573
——Reply by authors to A. Wortman. K. Gersten and J. F. Gross (AIAA J, TC) 574
Correlation of peak heating in the reattachment region of separated flows. Richard D. Matthews and Jean J. Ginoux (AIAA J, TN) 397
Cross-flow effects on the boundary layer in a plane of symmetry. Anthony Agnone (JSR, EN) 542
Effect of nose geometry on the aerothermodynamic environment of shuttle entry configurations. John J. Bertin, H. Tom Faria, Winston D. Goodrich, and W. R. Martindale (JSR) 275
Evaluation of aerodynamic heating uncertainties for space shuttle. R. V. Masek, D. Hender, and J. A. Forney (JSR) 368
Extension of the momentum integral method to three-dimensional viscous-inviscid interactions. M. P. Georgeff (AIAA J, TN) 1603
Film cooling by oblique slot injection. R. H. Nilson and Y. G. Tsuei (AIAA J, TN) 727
Finite-difference version of quasi-linearization applied to boundary-layer equations. Kenji Inouye and Atsushi Tate (AIAA J, TN) 558
Finite-thickness diffusion flames over a pyrolyzing fuel plate. Harold Kerzner and Herman Krier (AIAA J, TN) 1155
Flowfield measurements in an asymmetric axial corner at $M = 12.5$. James R. Cooper and Wilbur L. Hankey Jr. (AIAA J) 1353
Foreign gas injection at windwardmost meridians of yawed sharp cones. Andrzej Wortman (AIAA J, SYN) 741
Further comments on "Local nonsimilarity boundary-layer solutions." David F. Rogers (AIAA J, TC) 1007
Higher order boundary layer for viscous flow past sharp wedges. S. N. Evbuoma, J. S. Walker, and J. M. Robertson (AIAA J, TN) 1001
Highly accelerated laminar flow at moderately large Reynolds number. Noor Afzal and V. K. Luthra (AIAA J) 529
Hypersonic lifting body boundary-layer analysis at high angles of incidence. J. C. Adams Jr. and W. R. Martindale (JSR) 721
Influence of segmentation and ambipolar diffusion on MHD nonequilibrium boundary layers. E. D. Doss, H. A. Swyer, and M. A. Hoffman (AIAA J) 155
Laminar boundary layer behind a shock wave propagating along perforated walls. K. Takayama (AIAA J, TN) 1152
Laminar boundary-layer induced wave forces on a submerged flat-plate hydrofoil. Allen Plotkin (JH) 47
Laminar boundary layer near the symmetry plane of a prolate spheroid. K. C. Wang (AIAA J) 949
Laminar boundary-layer response to freestream disturbances. P. J. Erens and V. A. L. Chasteau (AIAA J, TN) 93
Laminar shear-stress pattern for nonsimilar incompressible boundary layers. Tsai-tse Kao and Harold G. Elrod Jr. (AIAA J) 1401
Laminar stall prediction and estimation of $C_{L(max)}$. Suresh H. Goradia and Victor Lyman (JA) 528
Large amplitude, low frequency solutions for a certain class of laminar boundary-layer problems. James C. Williams III (AIAA J, SYN) 265
Method for calculating aerodynamic heating on sounding rocket tangent ogive noses. L. D. Wing (JSR) 357
Model wall and recovery temperature effects on experimental heat-transfer data analysis. D. A. Throckmorton and D. R. Stone (AIAA J, SYN) 1169
Momentum integral method for viscous-inviscid interactions with arbitrary wall cooling. Michael P. Georgeff (AIAA J) 1393
New method for supersonic boundary-layer separations. M. J. Werle and V. N. Vatsa (AIAA J) 1491
Note on boundary layer in a dusty gas. K. M. Chakrabarti (AIAA J, TN) 1136
Note on interacting boundary layers, A. H. E. Eickhoff (AIAA J, TN) 392
Note on unsteady boundary-layer separation. James C. Williams III and W. Donald Johnson (AIAA J, TN) 1427
One-parameter solution of the spanwise rotating blade boundary-layer equation. Z. U. A. Warsi (AIAA J, TN) 1421
Oscillating laminar boundary layers and unsteady separation. D. Th. Tsahalis and D. P. Telionis (AIAA J) 1469

Recent progress in boundary-layer research. Hermann Schlichting (AIAA J—37th Wright Brothers Lecture) 427
Response of separation to impulsive changes of outer flow. D. P. Telionis and D. T. Tsahalis (AIAA J) 614
Reversed boundary-layer flows with variable fluid properties. A. Wortman and W. J. Franks (AIAA J, TN) 406
Semisimilar solutions to unsteady boundary-layer flows including separation. James C. Williams III and W. Donald Johnson (AIAA J) 1388
Separating laminar boundary layers with prescribed wall shear. Harry P. Horton (AIAA J, TN) 1772
Shock wave boundary-layer interactions in laminar transonic flow. H. M. Brilliant and T. C. Adamson Jr. (AIAA J) 323
Supersonic laminar base pressure, heat-transfer, and upstream influence correlations for small steps. G. R. Inger (AIAA J, TN) 1157
Supersonic laminar flow past a small rear-facing step. G. R. Inger (AIAA J, SYN) 739
Surface flowfield induced by the turbulent boundary layer on a yawed cone. Jacques Marcillat (AIAA J, TN) 1164
Surface heat transfer in the flow of dissociated nitrogen. Norbert Peters (AIAA J, TN) 1747
Symmetric far wake behind a cylinder beneath the free surface. Allen Plotkin (JH, EN) 41
Thermal analysis for antenna window in AGM nosetip. Jimmie H. Smith (JSR, TN) 198
Three-dimensional laminar boundary layer oMer a body of revolution at incidence and with separation. W. Geissler (AIAA J, TN) 1743
Viscous effects in massively ablating planetary entry body flowfields. G. R. Inger (JSR, EN) 540
Viscous flow over spinning cones at angle of attack. T. C. Lin and S. G. Rubin (AIAA J) 975
Wall shear at a three-dimensional stagnation point with a moving wall. Paul A. Libby (AIAA J, TN) 408

Boundary Layers and Convective Heat Transfer—Turbulent

Aerodynamic heat transfer to RSI tile surfaces and gap intersections. James C. Dunavant and David A. Throckmorton (JSR, EN) 437
Analysis of compressible turbulent flow over a yawed cone. A. Robin Mowlem and Russell A. Smith (AIAA J, SYN) 1171
Arbitrary pressure gradient integral technique for predicting boundary layer and thermal parameters. Richard J. Flaherty (JA) 293
Attachment-line flow on an infinite swept wing. Tuncer Cebeci (AIAA J, TN) 242
Boundary-layer theory for pressure and drag of a wavy surface. Kenneth H. Rogers (JA) 382
Calorimeter measurement of heat transfer at hypersonic conditions. Mitchell R. Wool, Andrew J. Murphy, and Roald A. Rindal (JSR) 363
Calculation of three-dimensional boundary layers I. Swept infinite cylinders and small cross flow. Tuncer Cebeci (AIAA J) 779
Combustion of carbon particles in a hypersonic turbulent boundary layer. A. T. Wassel and A. F. Mills (JSR) 803
Comment on "Calculation of turbulent boundary-layer shock-wave interaction." Daniel C. Reda (AIAA J, TC) 1291
——Reply by author to D. C. Reda. David C. Wilcox (AIAA J, TC) 1292
Comment on "Evaluation of Preston tube calibration equations in supersonic flow." P. Bradshaw and K. Unsworth (AIAA J, TC) 1293
——Reply by author to P. Bradshaw and K. Unsworth. Jerry M. Allen (AIAA J, TC) 1295
Comment on "Mean velocity profile of a thick turbulent boundary layer along a circular cylinder." G. N. V. Rao (AIAA J, TC) 574
Comments on Crocco's solution and the independence principle for compressible turbulent boundary layers. Ivan E. Beckwith (AIAA J, TN) 245
Computation of hypersonic turbulent boundary layers with heat transfer. J. S. Shang (AIAA J, SYN) 883
Contribution of a wall shear stress to the Magnus effect on nose shapes. Ira D. Jacobson (AIAA J, TN) 1003
Cooling by discrete and porous injection into a turbulent, supersonic boundary layer. K. J. Clark, C. T. Nardo, N. A. Jaffe, and M. A. Covington (AIAA J) 1679
Cross-flow effects on the boundary layer in a plane of symmetry. Anthony Agnone (JSR, EN) 542
Cross-hatching studies—A critical review. Rudolph J. Swigart (AIAA J, SA) 1301
Effect of adverse pressure gradient on film cooling effectiveness. V. Zakkay, Chi R. Wang, and M. Miyazawa (AIAA J, TN) 708
Effect of finite chemical reaction rates on heat transfer to the walls of combustion-driven supersonic MHD generator channels. J. W. Daily, J. Raeder, and G. Zankl (AIAA J, TN) 403
Effect of nose geometry on the aerothermodynamic environment of shuttle entry configurations. John J. Bertin, H. Tom Faria, Winston D. Goodrich, and W. R. Martindale (JSR) 275
Effect of wall temperature spatial variations on aerodynamic heating to an actively cooled aircraft. Robert A. Jones and Christine B. Richie (JA, EN) 488
Estimation of turbulent energy dissipation using available transfer theories. Z. U. A. Warsi and L. J. Mertaugh (AIAA J, TN) 237
Evaluation of aerodynamic heating uncertainties for space shuttle. R. V. Masek, D. Hender, and J. A. Forney (JSR) 368
Flowfield analysis for successive oblique shock wave-turbulent boundary-layer interactions. Chen-Chih Sun and Morris E. Childs (JA) 54
Generalized flow in gaps and slots including the effects of ablation. Larry Cooper and Kurt E. Putz (JSR) 287
Growth of turbulent boundary layers over nonstationary boundaries. Alan T. Roper and Garl L. Gentry (AIAA J, TN) 95
Heat transfer measurements in turbines. J. F. Louis, A. M. Demirjian, and R. F. Topping (PS, V. 34) 331
Hypersonic lifting body boundary-layer analysis at high angles of incidence. J. C. Adams Jr. and W. R. Martindale (JSR) 721
Hypersonic, turbulent skin-friction and heat-transfer measurements on a sharp cone. Kuei-Yuan Chien (AIAA J) 1522
Incipient separation of axially symmetric hypersonic turbulent boundary layers. G. T. Coleman and J. L. Stollery (AIAA J, TN) 119
Influence of segmentation and ambipolar diffusion on MHD nonequilibrium boundary layers. E. D. Doss, H. A. Dwyer, and M. A. Hoffman (AIAA J) 155
Integral solution of the turbulent energy equation. Paolo Baronti and Gabriel Miller (AIAA J, TN) 108
Laminar stall prediction and estimation of $C_{L(max)}$. Suresh H. Goradia and Victor Lyman (JA) 528
Laser anemometer measurements of surface pressure distributions. S. J. Barker and H. W. Liepmann (AIAA J, TN) 1758
Method for calculating aerodynamic heating on sounding rocket tangent ogive noses. L. D. Wing (JSR) 357
Method for calculating unsteady turbulent boundary layers in two- and three-dimensional flows. Robert E. Singleton and John F. Nash (AIAA J) 590
New diagnostic technique for the study of turbulent boundary-layer separation. C. C. Horstman and F. K. Owen (AIAA J, TN) 1436
Numerical study of supersonic turbulent boundary layer over a small protuberance. A. Polak (AIAA J, TN) 1409
Prediction of axisymmetric turbulent swirling boundary layers, The. M. L. Koosinlin and F. C. Lockwood (AIAA J) 547
Prediction of turbulent heat transfer and pressure on swept leading edges. Hugh W. Coleman and E. Clark Lemmon (JSR) 376
Prediction of turbulent separated boundary layers, The. Gary D. Kuhn and Jack N. Nielsen (AIAA J, SYN) 881
Recent progress in boundary-layer research. Hermann Schlichting (AIAA J—37th Wright Brothers Lecture) 427
Some response characteristics of parabolic hot films in water. A. R. M. Nowell (JH, EN) 169
Stability of flow through porous plates: Coalescent jets effect. Marcos Pimenta and Robert J. Moffat (AIAA J, TN) 1438
Strong planar shock waves generated by explosively-driven spherical implosions. I. I. Glass, S. K. Chan, and H. L. Brode (AIAA J) 367
Supersonic, turbulent boundary-layer separation. C. Herbert Law (AIAA J) 794
Surface flowfield induced by the turbulent boundary layer on a yawed cone. Jacques Marcillat (AIAA J, TN) 1164
Swept-slot film-cooling effectiveness in hypersonic turbulent flow. Jerry N. Hefner and Aubrey M. Cary Jr. (JSR, EN) 351
Theoretical suction and pressure distribution bounds for flow separation in retarded flow. Tuncer Cebeci and G. F. Witherspoon (JA, EN) 61
Thermal analysis for antenna window in AGM nosetip. Jimmie H. Smith (JSR, EN) 198
Transonic wind-tunnel and flight buffet pressures on a swept wing. C. E. Lemley and R. E. Mullans (JA) 173
Transpiration nosetip coolant flow control. John R. Schuster, Roger A. Glickman, and Douglas R. Hender (JSR) 152
Turbulence measurements in a compressible boundary layer. William C. Rose (AIAA J) 1060
Turbulence measurements in a Mach 2.9 boundary layer using laser velocimetry. Dennis A. Johnson (AIAA J, TN) 711
Turbulence-model predictions for turbulent boundary layers. P. G. Saffman and D. C. Wilcox (AIAA J) 541
Turbulent boundary-layer flow separation measurements using holographic interferometry. Albert G. Havener and Roger J. Radley Jr. (AIAA J) 1071

Turbulent boundary-layer shear stress distributions for compressible adverse pressure gradient flow. Walter B. Sturek (AIAA J, TN) 375
Turbulent compressible three-dimensional mean flow profiles. Michael C. Fischer and Leonard M. Weinstein (AIAA J, SYN) 131
Turbulent swirling flame prediction. David G. Lilley (AIAA J) 219
Two-layer model of turbulent boundary layers. Barry L. Reeves (AIAA J) 932
Wall shear and boundary-layer measurements in shock separated flow. Paul J. Waltrup and James M. Cameron (AIAA J, TN) 878
Wall shear in strongly retarded and separated compressible turbulent boundary layers. M. W. Rubesin, J. D. Murphy, and W. C. Rose (AIAA J, TN) 1442

Boundary-Layer Stability and Transition

Blowing simulation of asymmetric transition effects on slender ablating vehicles. Lars E. Ericsson (JSR, EN) 58
Boundary-layer transition on cones near Mach one. J. Leith Potter (AIAA J, TN) 570
Boundary-layer transition on the same model in two supersonic wind tunnels. R. Ross (AIAA J, TN) 992
Calculation of low Reynolds number flow past a square protuberance. Clarence W. Kitchens Jr. (AIAA J, TN) 1005
Comparison of NASA helium tunnel transition data with noise-transition correlation. S. R. Pate (AIAA J, TC) 1615
Correlation of attitude effects on slender vehicle transition. Lars E. Ericsson (AIAA J) 523
Dynamic flow studies by application of pressure and velocity sensors on axial flow fan blades. John T. Carroll (PS, V. 34) 115
Hypersonic lifting body boundary-layer analysis at high angles of incidence. J. C. Adams Jr. and W. R. Martindale (JSR) 721
Laminar boundary-layer response to freestream disturbances. P. J. Erens and V. A. L. Chasteau (AIAA J, TN) 93
Laminar-turbulent transition in flow of pseudoplastic fluids with yield stresses. Richard W. Hanks and Brad L. Ricks (JH) 163
Linear spatial stability of the plane Poiseuille flow. R. K. Leong (AIAA J, TN) 1605
Role of jet stability in edgetone generation. James P. Woolley and K. Karamcheti (AIAA J, SYN) 1457
Taylor-Gortler instability of a boundary layer with suction or blowing. Ryoji Kobayashi (AIAA J, TN) 394
Transition effects on slender vehicle stability and trim characteristics. Lars E. Ericsson (JSR) 3
——Transition effects on slender vehicle stability and trim characteristics. Lars E. Ericsson (JSR, ERR) 448
Transition prediction technique. J. A. Benek and M. D. High (AIAA J, TN) 1425
Turbulent compressible three-dimensional mean flow profiles. Michael C. Fischer and Leonard M. Weinstein (AIAA J, SYN) 131

Hydrodynamics

Additional two-dimensional wake and jet-like flows. James E. Danberg and Kevin S. Fansler (AIAA J, TN) 1432
Analytical prediction of the influence of polymer additives on the shear drag of bodies of revolution. Frederick L. Test (JH, SYN) 45
Axisymmetric cavity flows past slender bodies of revolution. Y. S. Chou (JH) 13
Axisymmetric potential flow in a circular tube. L. Landweber (JH) 137
Calculation of low Reynolds number flow past a square protuberance. Clarence W. Kitchens Jr. (AIAA J, TN) 1005
Calculation of the viscous resistance of bodies of revolution. A. Nakayama and V. C. Patel (JH) 154
Comment on "The lift force due to von Karman's vortex wake." Peter R. Payne (JH, TC) 121
——Reply by author to P. R. Payne. D. W. Sallet (JH, TC) 123
Comment on "The lift force due to von Karman's vortex wake." M. Tanner (JH, TC) 124
Correlation of force measurements and separated flow regions on surface piercing struts. P. D. Swales, R. C. McGregor, and A. J. Wright (JH, EN) 72
Doublet lattice-source method for calculating unsteady loads on cavitating hydrofoils. James F. Unruh and Robert L. Bass III (JH) 146
Effect of the adverse pressure gradient on vortex breakdown. Turgut Sarpkaya (AIAA J) 602
Electric probes in stationary and flowing plasmas: Part I. Collisionless and transitional probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 133
Electric probes in stationary and flowing plasmas: Part 2. Continuum probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 144
Higher order boundary layer for viscous flow past sharp wedges. S. N. Evbuoma, J. S. Walker, and J. M. Robertson (AIAA J, TN) 1001
Hydrodynamics of large objects in the sea. Part I—Hydrodynamic analysis. C. J. Garrison (JH) 5
Incompressible potential flow solutions for arbitrary bodies of revolution. William L. Oberkampf and Leon E. Watson Jr. (AIAA J, TN) 409
Influence of viscosity on the stability of a cylindrical jet. J. N. Anno (AIAA J, TN) 1137
Irrotational subsonic flow of an ideal gas in two-dimensional ducts—Optimal ducts and ducts with plane sonic exits. M. J. Cohen and H. Portnoy (AIAA J) 608
Laminar boundary-layer induced wave forces on a submerged flat-plate hydrofoil. Allen Plotkin (JH) 47
Laminar-turbulent transition in flow of pseudoplastic fluids with yield stresses. Richard W. Hanks and Brad L. Ricks (JH) 163
Laser anemometer measurements of surface pressure distributions. S. J. Barker and H. W. Liepmann (AIAA J, TN) 1758
Laser burnthrough time reduction due to tangential airflow—An interpolation formula. R. L. Johnson and J. D. O'Keefe (AIAA J) 1106
Linear spatial stability of the plane Poiseuille flow. R. K. Leong (AIAA J, TN) 1605
Separation over a flat plate-wedge configuration at oceanic Reynolds numbers. David R. Campbell (JH, SYN) 3
Shaping of axisymmetric bodies for minimum drag in incompressible flow. Jerome S. Parsons, Raymond E. Goodson, and Fabio R. Goldschmied (JH) 100
Symmetric far wake behind a cylinder beneath the free surface, The. Allen Plotkin (JH, EN) 41
Various aspects of the structural theory of liquids. David A. Hunt (AIAA J) 1548
Wake growth and collapse in stratified flow. Gordon E. Merritt (AIAA J) 940

Jets, Wakes, and Viscid-Inviscid Flow Interactions

Additional two-dimensional wake and jet-like flows. James E. Danberg and Kevin S. Fansler (AIAA J, TN) 1432
Aircraft turbine engine emissions under simulated supersonic flight conditions. R. C. German, C. E. Robinson, M. D. High, and R. F. Lauer (JA) 472
Aircraft wake vortex transport model. M. R. Brashears and James N. Hallock (JA) 265
Application of laser Raman scattering to the study of turbulence. Danny L. Hartley (AIAA J) 816
Application of Raman effect to flowfield diagnostics. S. Lederman and J. Bornstein (PS, V. 34) 283
Application of turbulence model equations to axisymmetric wakes. W. S. Lewellen, M. Teske, and Coleman duP. Donaldson (AIAA J) 620
Approximate distribution of particle mass flux in a high altitude solid propellant rocket plume, An. Blaine E. Pearce (AIAA J, TN) 718
Approximate method for estimating wake vortex strength. John E. Fidler
Axial flow measurements in trailing vortices. D. L. Ciffone and K. L. Orloff (AIAA J, TN) 1154
Base flow analysis for a dual-engine booster. Yong S. Hong (JSR, SYN) 209
Blowing simulation of asymmetric transition effects on slender ablating vehicles. Lars E. Ericsson (JSR, EN) 58
Boundary-layer transition on the same model in two supersonic wind tunnels. R. Ross (AIAA J, TN) 992
Calculation of aircraft wake velocity profiles and comparison with experimental measurements. Coleman duP. Donaldson, Richard S. Snedeker, and Roger D. Sullivan (JA) 547
Calculation of compressible turbulent free shear layers. Youn H. Oh (AIAA J, TN) 401
Calculation of free turbulent mixing by the interaction approach. Thomas Morel and T. Paul Torda (AIAA J) 533
Calculation of initial vortex roll-up in aircraft wakes. John E. Yates (JA) 397
Cambered Joukowsky airfoil in a nonuniform weak shear flow. A. K. Gupta and S. C. Sharma (JA, EN) 653
Centerline velocity decay of compressible free jets. Peter O. Witze (AIAA J, SYN) 417
Comment on "Calculation of turbulent boundary-layer shock-wave interaction." Daniel C. Reda (AIAA J, TC) 1291
——Reply by author to D. C. Reda. David C. Wilcox (AIAA J, TC) 1292
Comment on "Stability of rotating stratified fluids." Ulrich H. Kurzweg (AIAA J, TC) 415
——Reply by author to U. H. Kurzweg. Sheridan C. Johnston (AIAA J, TC) 416
Comment on "The lift force due to von Karman's vortex wake." Peter R. Payne (JH, TC) 121

——Reply by author to P. R. Payne. D. W. Sallet (JH, TC) 123
Comment on "The lift force due to von Karman's vortex wake." M. Tanner (JH, TC) 124
Correlation for estimating vortex rotational velocity downstream dependence. D. L. Ciffone (JA, EN) 716
Development of the Viking parachute configuration by wind-tunnel investigation. Sy Steinberg, Paul M. Siemers III, and Robert G. Slayman (JSR) 101
Direct mixing and combustion efficiency measurements in ducted, particle-laden jets. S. W. Abbott, L. D. Smoot, and K. Schadow (AIAA J) 275
Dispersion and dilution of jet aircraft exhaust at high-altitude flight conditions. James D. Holdeman (JA) 483
Eddy viscosity for variable density coflowing streams. Robert E. Boyle Jr. and Hermann Viets (JA, SYN) 721
Effect of nose geometry on the aerothermodynamic environment of shuttle entry configurations. John J. Bertin, H. Tom Faria, Winston D. Goodrich, and W. R. Martindale (JSR) 275
Evaluation of hypermixing for thrust augmenting ejectors. Paul M. Bevilaqua (JA) 348
Experimental investigation of gas injection through a transverse slot into a subsonic cross flow. George Rudinger (AIAA J, TN) 566
Experimental investigation of small scale transport mechanisms in the stratosphere. N. W. Rosenberg, R. E. Good, W. K. Vickery, and E. M. Dewan (AIAA J) 1094
Experimental study of separation from the base of a cone at supersonic speeds. Lyle D. Kayser and James E. Danberg (AIAA J, TN) 1607
Experimental wake flow properties of a Viking '75 entry vehicle. James F. Campbell and Clarence A. Brown Jr. (JSR) 11
Extension of the momentum integral method to three-dimensional viscous-inviscid interactions. M. P. Georgeff (AIAA J, TN) 1603
Flight test base pressure results for sharp 8° cones. Richard G. Batt (AIAA J, TN) 555
Flowfield measurements in an asymmetric axial corner at $M = 12.5$. James R. Cooper and Wilbur L. Hankey Jr. (AIAA J) 1353
Flow separation over axisymmetric afterbody models. Walter M. Presz Jr. and Edward T. Pitkin (JA) 677
Hot-wire measurements in a supersonic jet at low Reynolds numbers. Dennis K. McLaughlin and Charles J. McColgan (AIAA J, TN) 1279
Incipient separation of axially symmetric hypersonic turbulent boundary layers. G. T. Coleman and J. L. Stollery (AIAA J, TN) 119
Influence of flaps and engines on aircraft wake vortices. David C. Burnham and Thomas E. Sullivan (JA, EN) 591
Inviscid supersonic far wake flow past pointed bodies. Prabhakara P. Rao (AIAA J, SYN) 421
Laminar viscous-inviscid interactions at transonic speeds. Donald J. Collins (AIAA J, TN) 1146
Laser velocimeter system development and testing. Jeffrey A. Asher (PS, V. 34) 141
Mach disk from underexpanded axisymmetric nozzle flow. I.-Shih Chang and W. L. Chow (AIAA J) 1079
Mean flow development and surface heating for an attaching compressible free shear layer. David H. Rudy and Stanley F. Birch (JSR, EN) 348
Measurements in the near field of supersonic nozzles for chemical laser systems. D. L. Whitfield, J. W. L. Lewis, and W. D. Williams (AIAA J, TN) 870
Method for producing a uniform low Reynolds number jet. George C. Greene and Donald F. Brink (JSR, EN) 604
Methods for the design and analysis of jet-flapped airfoils. N. D. Halsey (JA) 540
Momentum integral method for viscous-inviscid interactions with arbitrary wall cooling. Michael P. Georgeff (AIAA J) 1393
Navier-Stokes solutions for flow past a class of two-dimensional s3mi-infinite bodies. U. Ghia and R. T. Davis (AIAA J) 1659
New method for supersonic boundary-layer separations. M. J. Werle and V. N. Vatsa (AIAA J) 1491
Noise characteristics of a turbulent crosswind jet. John E. Cole III (AIAA J) 198
Noise characteristics of combustion augmented jets at midsubsonic speeds. A. N. Abdelhamid, D. T. Harrje, E. G. Plett, and M. Summerfield (AIAA J) 336
Normal impingement of jets. V. Parameswaran and S. A. Alpay (JA, EN) 189
Numerical solution of three-dimensional Navier-Stokes equations showing trailing tip vortices. J. F. Thompson, S. P. Shanks, and J. C. Wu (AIAA J) 787
Numerical study of supersonic turbulent boundary layer over a small protuberance. A. Polak (AIAA J, TN) 1409
On prediction of separated boundary layers with pressure distribution specified. Philip M. Gerhart (AIAA J, TN) 1278
On the structure of jet plumes. John H. Fox (AIAA J, TN) 105
Penetration of particles injected into a constant cross flow. George Rudinger (AIAA J, TN) 1138
Prediction of turbulent separated boundary layers. Gary D. Kuhn and Jack N. Nielsen (AIAA J, SYN) 881
Prediction of yawing force at high angle of attack. Andrew B. Wardlaw Jr. (AIAA J, TN) 1142
Pressure sources for a wave model of jet noise. Y. Y. Chan (AIAA J, TN) 241
Radial base heat-transfer gradients in turbulent flow. Bruce M. Bulmer (JSR, EN) 798
Recent progress in boundary-layer research. Hermann Schlichting (AIAA J-37th Wright Brothers Lecture) 427
Response of miniature pressure transducers to fluctuations in supersonic flow. E. Grande and G. C. Oates (PS, V. 34) 3
Role of jet stability in edgetone generation. James P. Woolley and K. Karamcheti (AIAA J, SYN) 1457
Simple technique for predicting Type III and IV shock interference. T. Taz Bramlette (AIAA J, TN) 1151
Simplified mixing length model of flame stability in swirling combustion, A. D. S. Hacker (AIAA J) 65
Stability of flow through porous plates: Coalescent jets effect. Marcos Pimenta and Robert J. Moffat (AIAA J, TN) 1438
Steady, incompressible, swirling jets and wakes. Artur Mager (AIAA J) 1540
Study of compressible potential and asymptotic viscous flows for corner region, A. K. N. Ghia and R. T. Davis (AIAA J) 355
——Study of compressible potential and asymptotic viscous flows for corner region, A. K. N. Ghia and R. T. Davis (AIAA J, ERR) 1456
Study of methods for modeling centerline mass fraction decay in turbulent jets. S. W. Zelazny (AIAA J, TN) 235
Symmetric far wake behind a cylinder beneath the free surface, The. Allen Plotkin (JH, EN) 41
Thick, two-dimensional, turbulent boundary layers separated by steps and slot jets. Richard T. Driftmyer (AIAA J) 21
Trailing vortex wind-tunnel diagnostics with a laser velocimeter. Kenneth L. Orloff (JA) 477
Transient molecular concentration measurements in turbulent flows using Rayleigh light scattering. S. C. Graham, A. J. Grant, and J. M. Jones (AIAA J, TN) 1140
Turbulent swirling flame prediction. David G. Lilley (AIAA J) 219
Unsteady flow downstream of an airfoil oscillating in a supersonic stream. Joseph M. Verdon (AIAA J, TN) 999
Vortex entrainment model applied to slender delta wings, A. Paul L. Coe Jr. (AIAA J, TN) 110
Vortex measurements behind a swept wing transport model. K. L. Orloff and D. L. Ciffone (JA, EN) 362
Vorticity associated with a jet in a cross flow. Richard Fearn and Robert P. Weston (AIAA J) 1666
Wake growth and collapse in stratified flow. Gordon E. Merritt (AIAA J) 940
Water tank study of the decay of trailing vortices. Dietrich K. Lezius (AIAA J) 1065

Multiphase Flows

Analysis of gas-solid particle flows in shock tubes. Bernard Otterman and Andrew S. Levine (AIAA J, SYN) 579
Approximate distribution of particle mass flux in a high altitude solid propellant rocket plume, An. Blaine E. Pearce (AIAA J, TN) 718
Boundary-layer theory for pressure and drag of a wavy surface. Kenneth H. Rogers (JA) 382
NaK-nitrogen liquid metal MHD converter tests at 30 kw. D. J. Cerini (AIAA J) 78
Particle flow in turbomachinery with application to laser-Doppler velocimetry. Barry R. Maxwell (AIAA J, SYN) 1297
Penetration of particles injected into a constant cross flow. George Rudinger (AIAA J, TN) 1138
Some effects caused by solid particles in flows. A. Hamed and W. Tabakoff (AIAA J, SYN) 581
Strong spherical blast waves in a dust-laden gas. Nathan Gerber and Joan M. Bartos (AIAA J, TN) 120
Variable energy blast wave measurements. P. M. Sherman and D. Gell (AIAA J, TN) 117

Nonsteady Aerodynamics

Aerodynamic inflation of shell type, parachute structures. B. W. Roberts (JA) 390
Analysis of gas-solid particle flows in shock tubes. Bernard Otterman and Andrew S. Levine (AIAA J, SYN) 579

Analysis of three-dimensional unsteady viscous flow around oscillating wings. Theodore Bratanow and Akin Ecer (AIAA J) 1577
Automated procedure for computing flutter eigenvalues, An. Robert N. Desmarais and Robert M. Bennett (JA) 75
Automatic detection and suppression of inlet buzz. L. O. Billig (PS, V. 34) 453
Axisymmetric, self-excited oscillations in parachutes. Bryan W. Roberts (JA) 736
Blade torsional tuning to manage large ampltude control loads. R. Gabel and F. Tarzanin Jr. (JA) 460
Calculations of flow around a semi-infinite flat plate in a shock tube. Tomiko Ishiguro (AIAA J, TN) 376
Calculation of unsteady transonic aerodynamics for oscillating wings with thickness. S. Y. Ruo, E. Carson Yates Jr., and J. G. Theisen (JA) 601
Combined effects of nose bluntness and cone angle on unsteady aerodynamics. L. E. Ericsson, R. A. Guenther, W. R. Stake, and G. S. Olmsted (AIAA J, TN) 729
Comment on "Stability of rotating stratified fluids." Ulrich H. Kurzweg (AIAA J, TC) 415
——Reply by author to U. H. Kurzweg. Sheridan C. Johnston (AIAA J, TC) 416
Comment on "Unsteady boundary-layer flow of power law fluids." T. Y. Na (AIAA J, TC) 1775
——Reply by author to T. Y. Na. Sreedhan Roy (AIAA J, TC) 1775
Compressibility effects in unsteady thin-airfoil theory. Roy K. Amiet (AIAA J, TN) 252
Compressor distortion estimates using parallel compressor theory and stall delay. James A. Korn (JA, EN) 584
Dynamic flow studies by application of pressure and velocity sensors on axial flow fan blades. John T. Carroll (PS, V. 34) 115
Effect of inlet turbulence on compressor noise. B. Robbins and B. Lakshminarayana (JA) 273
Effect of transducer diameter on resolution of total pressure fluctuations in a turbulent flows. W. G. Steenken (PS, V. 34) 167
Experimental investigation of a cylindrical resonator. James H. T. Wu, P. Perry Ostrowski, Rafik A. Neemeh, and Patrick H. W. Lee (AIAA J) 1076
Inlet distortion evaluation from limited high-response instrumentation. Stanley H. Ellis and Barry J. Brownstein (JA) 112
Investigation of acoustic effects of leading-edge serrations on airfoils. Alan S. Hersh, Paul T. Soderman, and Richard E. Hayden (JA) 197
Large amplitude, low frequency solutions for a certain class of laminar boundary-layer problems. James C. Williams III (AIAA J, SYN) 265
Lift and moment for arbitrary power-law upwash in oscillating subsonic unsteady thin-airfoil theory. Nelson H. Kemp (AIAA J, TN) 413
Lifting-surface theory for an oscillating T-Tail. Koji Isogai (AIAA J) 28
Lifting-surface theory for a semi-infinite wing in oblique gust. Sing Chu and Sheila E. Widnall (AIAA J) 1672
Linearized integral theory of three-dimensional unsteady flow in a shear layer. John E. Yates (AIAA J) 596
Measurement of instantaneous air angle and total temperature fluctuations behind transonic compressor rotors. Bruce V. Johnson, Henry V. Marman, John A. Brent, and Richard M. Hooper (PS, V. 34) 179
Method for calculating unsteady turbulent boundary layers in two- and three-dimensional flows. Robert E. Singleton and John F. Nash (AIAA J) 590
Note on boundary layer in a dusty gas. K. M. Chakrabarti (AIAA J, TN) 1136
Note on unsteady boundary-layer separation. James C. Williams III and W. Donald Johnson (AIAA J, TN) 1427
Numerical solution of three-dimensional Navier-Stokes equations showing trailing tip vortices. J. F. Thompson, S. P. Shanks, and J. C. Wu (AIAA J) 787
Numerical study of unsteady viscous flow past a lifting plate. Robert A. Schmall and Robert B. Kinney (AIAA J) 1566
Oblique compressible Sears function. L. T. Filotas (AIAA J, TN) 1601
On the applications of the finite element method in unsteady aerodynamics. Theodore Bratanow and Akin Ecer (AIAA J) 503
Oscillating laminar boundary layers and unsteady separation. D. Th. Tsahalis and D. P. Telionis (AIAA J) 1469
Passage of a swept airfoil through an oblique gust. John J. Adamczyk (JA) 281
P3G—A new dynamic distortion generator. P. H. Kutschenreuter Jr., T. P. Collins, and W. F. Vier III (JA) 344
Prediction of unsteady airloads for oblique blade-gust interaction in compressible flow. Sing Chu and Sheila E. Widnall (AIAA J) 1228
Response of separation to impulsive changes of outer flow. D. P. Telionis and D. T. Tsahalis (AIAA J) 614
Semisimilar solutions to unsteady boundary-layer flows including separation. James C. Williams III and W. Donald Johnson (AIAA J) 1388
Some measurements on dynamic stall. A. G. Parker and J. Bicknell (JA) 371
Subsonic potential aerodynamics for complex configurations: A general theory. Luigi Morino and Ching-Chiang Kuo (AIAA J) 191
Total pressure averaging in pulsating flows. L. N. Krause, T. J. Dudzinski, and R. C. Johnson (PS, V. 34) 193
Unsteadiness measurements in the flow through an oblique shock wave. E. R. Bergstrom, W. E. Boley, and S. Raghunathan (AIAA J, TN) 997
Unsteady aerodynamic response of a two-dimensional airfoil at high reduced frequency. G. L. Commerford and F. O. Carta (AIAA J) 43
Unsteady expansion waveforms generated by diaphragm rupture. J. Gordon Hall, G. Srinivasan, and Jaipal S. Rathi (AIAA J, TN) 724
Unsteady flow downstream of an airfoil oscillating in a supersonic stream. Joseph M. Verdon (AIAA J, TN) 999
Unsteady lift and radiated sound from a wake cutting airfoil. Hajime Fujita and Leslie S. G. Kovasznay (AIAA J) 1216
Unsteady subsonic aerodynamic loadings caused by control surface motions. W. S. Rowe, B. A. Winther, and M. C. Redman (JA) 45
Unsteady transonic flow analysis for low aspect ratio, pointed wings. K. R. Kimble, D. D. Liu, S. Y. Ruo and J. M. Wu (AIAA J) 516
Unsteady vortex flow past an inflating, decelerating wedge. K. R. Reddy (JA, EN) 427

Nozzle and Channel Flow

Approximate configuration factors for a gray nonisothermal gas-filled conical enclosure. R. B. Bannerot and F. A. Wierum (PS, V. 35) 41
Axisymmetric potential flow in a circular tube. L. Landweber (JH) 137
Boundary conditions and uniqueness in internal gas dynamic flows. Anthony A. Ganz and Raymond A. Serra (AIAA J, SYN) 263
Boundary-layer considerations in the design of aerodynamic contractions. G. E. Chmielewski (JA, SYN) 435
Computation of steady nozzle flow by a time-dependent method. Michael C. Cline (AIAA J, SYN) 419
Design of maximum thrust nozzles for nonequilibrium chemically reacting flow. Allan A. Taylor and Joe D. Hoffman (AIAA J, SYN) 1299
Design of shrouded-plug nozzles for maximum thrust. Richard Vander Veen, Roy Gentry, and Joe D. Hoffman (AIAA J) 1193
Development of an MHD-augmented, high enthalpy, shock tunnel facility. S. R. Pate, L. G. Siler, D. W. Stallings, and D. A. Wagner (AIAA J) 289
Electron nonequilibrium in open-cycle MHD generators. G. S. Argyropoulos, S. T. Demetriades, E. D. Doss, and D. A. Oliver (AIAA J) 669
Experimental investigation of a cylindrical resonator. James H. T. Wu, P. Perry Ostrowski, Rafik A. Neemeh, and Patrick H. W. Lee (AIAA J) 1076
Experimental investigation of gas injection through a transverse slot into a subsonic cross flow. George Rudinger (AIAA J, TN) 566
Flowfield in the combustion chamber of a solid propellant rocket motor. R. Dunlap, P. G. Willoughby, and R. W. Hermsen (AIAA J, TN) 1440
Flow properties in expansion tube with helium, argon, air, and CO_2. Charles G. Miller (AIAA J, TN) 564
Gas dynamic gain of supersonic thrust nozzles. Joe D. Hoffman and A. R. Maykut (JSR) 697
Holography of nozzles, jets, and spraying systems. J. D. Trolinger, R. A. Belz, and J. E. O'Hare (PS, V. 34) 249
Improved static probe design, An. S. Z. Pinckney (AIAA J, TN) 562
Integral relations method computations of annular and asymmetric plane nozzle flowfields. Signey G. Liddle (JSR) 146
Integral theory for inviscid, rotational flow in variable area ducts, An. M. Sajben (AIAA J, TN) 378
Investigation of the use of holography in studying supersonic flow in inlets. W. C. Spring III and W. C. Ragsdale (PS, V. 34) 95
Irrotational subsonic flow of an ideal gas in two-dimensional ducts——Optimal ducts and ducts with plane sonic exits. M. J. Cohen and H. Portnoy (AIAA J) 608
Laser absorption and gain by Ar^+ -ion states in a supersonic expansion. David L. Murphree, Richard P. Carter, and Dennis R. Smith (AIAA J, TN) 1732

Maximum thrust nozzles for gas particle flows. Arnold A. Elsbernd and Joe D. Hoffman (AIAA J) 283
Measurements in the near field of supersonic nozzles for chemical laser systems. D. L. Whitfield, J. W. L. Lewis, and W. D. Williams (AIAA J, TN) 870
Numerical solution of the incompressible Navier-Stokes equations in doubly connected regions. Des R. Sood and Harold G. Elrod Jr. (AIAA J) 636
On the inverse calculation of the mass flow parameter. Joe Der Jr. and John K. Stauffer (JA, EN) 121
Particle flow in turbomachinery with application to laser-Doppler velocimetry. Barry R. Maxwell (AIAA J, SYN) 1297
Penetration of particles injected into a constant cross flow. George Rudinger (AIAA J, TN) 1138
Prediction of pressure drop in straight vortex tubes. William J. Love (AIAA J) 959
Prediction of pressure fluctuation in sounding rockets and manifolded recovery systems. John F. Laudadio (JSR, EN) 119
Rocket exhaust flow in tube launchers. James L. Batson and John J. Bertin (JSR, SYN) 739
Unsteady expansion waveforms generated by diaphragm rupture. J. Gordon Hall, G. Srinivasan, and Jaipal S. Rathi (AIAA J, TN) 724
Wall shear and boundary-layer measurements in shock separated flow. Paul J. Waltrup and James M. Cameron (AIAA J, TN) 878
Structure of shock waves in cylindrical ducts. Paul J. Waltrup and Frederick S. Billig (AIAA J, TC) 736

Plasma Dynamics and MHD

Basic limitation in microwave measurement of plasma temperature. A. Singer and J. M. Minkowski (AIAA J, TN) 1286
Development of an MHD-augmented, high enthalpy, shock tunnel facility. S. R. Pate, L. G. Siler, D. W. Stallings, and D. A. Wagner (AIAA J) 289
Effect of finite chemical reaction rates on heat transfer to the walls of combustion-driven supersonic MHD generator channels. J. W. Daily, J. Raeder, and G. Zankl (AIAA J, TN) 403
Effective electrical conductivity and related properties of a nonequilibrium high pressure MHD plasma. G. Brederlow and K. J. Witte (AIAA J) 83
Electric probes in stationary and flowing plasmas: Part 1. Collisionless and transitional probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 133
Electric probes in stationary and flowing plasmas: Part 2. Continuum probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 144
Electron nonequilibrium in open-cycle MHD generators. G. S. Argyropoulos, S. T. Demetriades, E. D. Doss, and D. A. Oliver (AIAA J) 669
Electrolytic capacitor power source design for quasi-steady magneto-plasmadynamic arcs. Marco S. Di Capua and Helmut L. Kurtz (JSR) 554
Electrostatic probe measurements of chemical injection effects during a re-entry flight test. D. T. Hayes, S. B. Herskovitz, J. F. Lennon, and J. L. Poirier (JSR) 388
Establishment of quasi-steady conditions in a blow-down nonequilibrium MHD generator. J. J. Rosciszewski and T. T. Yeh (AIAA J) 1021
Exhaust plume structure in a quasi-steady MPD accelerator. Adam P. Bruckner and Robert G. Jahn (AIAA J) 1198
Experimental study of mixed convection heat transfer in an MHD channel. H. K. Yang and C. P. Yu (AIAA J, TN) 1740
Flow rate limitations in the self-field accelerator. Helmut Hugel (AIAA J, SYN) 1461
Influence of segmentation and ambipolar diffusion on MHD nonequilibrium boundary layers. E. D. Doss, H. A. Dwyer, and M. A. Hoffman (AIAA J) 155
Ion current collection by cylindrical electrostatic probe in a flowing plasma. Keiichi Kusumoto, Takao Yoshikawa, and Toshimitsu Murasaki (AIAA J, TN) 726
Jet-diagnostics of a self-field accelerator with Langmuir probes. F. Maisenhalder and W. Mayerhofer (AIAA J) 1203
Laser absorption and gain by Ar^+ -ion states in a supersonic expansion. David L. Murphree, Richard P. Carter, and Dennis R. Smith (AIAA J, TN) 1732
Local thermal equilibrium in a transient arc. David M. Benenson and August A. Cenkner Jr. (AIAA J, TN) 116
NaK-nitrogen liquid metal MHD converter tests at 30 kw. D. J. Cerini (AIAA J) 78
Performance of a Faraday rare gas alkali MHD generator. G. Brederlow, K. J. Witte, and H. Zinko (AIAA J) 481
Plasma fluctuations in a Kaufman thruster. John S. Serafini and Fred F. Terdan (JSR) 752
Role of plasma boundary conditions in the comparison of electron plasma temperatures. A. Singer and J. M. Minkowski (AIAA J, TN) 876
Sensing incipient engine failure with electrostatic probes. Robert P. Couch, Dennis R. Rossbach, and Ray W. Burgess Jr. (PS, V. 34) 515
Simple spectroscopic technique for the arc region of plasma accelerators. Robert P. Collier and David S. Scott (AIAA J, TN) 103
Small signal gain calculations for high-flow CO discharge lasers. Neill S. Smith, H. A. Hassan, and Roy M. McInville (AIAA J, SYN) 1619
Stability of nonequilibrium MHD plasma in the regime of fully ionized seed. Takashi Nakamura and Wolfgang Riedmuller (AIAA J) 661
Suppression of ionization instability in an MHD disk generator. Susumu Shoda and Hiroyuki Yamasaki (AIAA J, TN) 1763

Radiatively Coupled Flows and Heat Transfer

Approximate configuration factors for a gray nonisothermal gas-filled conical enclosure. R. B. Bannerot and F. A. Wierum (PS, V. 35) 41
Computations of CO_2 laser radiation-absorption in SF_6-air boundary layers. John D. Anderson Jr. (AIAA J) 1527
Coupled nongray radiating flow about ablating planetary entry bodies. Kenneth Sutton (AIAA J) 1099
Engineering approximations for radiating nonequilibrium shock layers. Leland A. Carlson (AIAA J) 832
Hydrogen ionization in the shock layer for entry into the outer planets. John T. Howe (AIAA J, TN) 875
Propulsion by absorption of laser radiation. A. N. Pirri, M. J. Monsler, and P. E. Nebolsine (AIAA J) 1254
Radiation-gas dynamic shock layer coupling. Carl D. Engel and Richard C. Farmer (AIAA J, TN) 1144
Radiation heat transfer in multilayer insulation having perforated shields. C. L. Tien and G. R. Cunnington (PS, V. 35) 65
Thermal modeling of a plate with coupled heat-transfer modes. Manohar S. Sohal and John R. Howell (PS, V. 35) 99
Thick-thin approximation for radiative transfer. Walter B. Olstad (PS, V. 35) 75

Rarefied Flows

Application of Smith's model to rotational temperature measurements in nitrogen. Jean-Claude Lengrand and Michel Cloupeau (AAAA J) 812
Density survey in the hypersonic viscous shock layer on a sharp flat plate. J. M. Avidor and S. Lederman (AIAA J, TN) 993
Hypersonic merged stagnation shock layers. Part I: Adiabatic wall case. A. C. Jain and V. Adimurthy (AIAA J) 342
Hypersonic merged stagnation shock layers. Part II: Cold wall case. A. C. Jain and V. Adimurthy (AIAA J) 348
Numerical computation of hypersonic viscous flow over a sharp leading edge. J. C. Tannehill, R. A. Mohling, and J. V. Rakich (AIAA J, SYN) 129
Numerical solution of a nonlinear integral equation by the use of step functions: III. Continuous solutions. Kenneth K. Yoshikawa (AIAA J, TN) 1769
Velocity distribution functions near the leading edge of a flat plate. Manfred Becker, Frank Robben and Robert Cattolica (AIAA J) 1247
Viscous flow over spinning cones at angle of attack. T. C. Lin and S. G. Rubin (AIAA J) 975

Reactive Flows

Combustion of carbon particles in a hypersonic turbulent boundary layer. A. T. Wassel and A. F. Mills (JSR) 803
Comment on "Effects of nonequilibrium ablation chemistry on Viking radio blackout." D. E. Jensen (JSR, TC) 736
——Reply by authors to D. E. Jensen. John S. Evans, Charles J. Schexnayder Jr., and William L. Grose (JSR, TC) 736
Comment on "Hypersonic, viscous shock layer with chemical nonequilibrium for spherically blunted cones." E. W. Miner and Clark H. Lewis (AIAA J, TC) 124
——Reply by authors to E. W. Miner and C. H. Lewis. Sang-Wook Kang and Michael G. Dunn (AIAA J, TC) 127
CW HF chemical laser flow diagnostic measurements. Robert L. Varwig and Munson A. Kwok (AIAA J) 208
Effect of kinetic rate uncertainties on gasdynamic laser gain and energy predictions. John D. Anderson Jr. (AIAA J) 1699

Effects of nonequilibrium ablation chemistry on Viking radio blackout. John S. Evans, Charles J. Schexnayder Jr., and William L. Grose (JSR) 84
Electric probes in stationary and flowing plasmas: Part 1. Collisionless and transitional probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 133
Electric probes in stationary and flowing plasmas: Part 2. Continuum probes. P. M. Chung, L. Talbot, and K. J. Touryan (AIAA J, SA) 144
Experimental measurements in supersonic reacting ($F+H_2$) mixing layers. W. L. Shackleford, A. B. Witte, J. E. Broadwell, J. E. Trost, and T. A. Jacobs (AIAA J, SYN) 1009
Finite-thickness diffusion flames over a pyrolyzing fuel plate. Harold Kerzner and Herman Krier (AIAA J, TN) 1155
Gas concentration measurement by coherent Raman anti-Stokes scattering. P. R. Regnier, F. Moya, and J. P. E. Taran (AIAA J) 826
Hydrogen ionization in the shock layer for entry into the outer planets. John T. Howe (AIAA J, TN) 875
Influence of ablation impurities on blunt body re-entry ionization. C. J. Schexnayder Jr. and J. S. Evans (AIAA J) 805
Linear theory for chemically reacting flows. J. C. Wu and L. Turner III (AIAA J) 468
Photographic observations of CW HF chemical laser reacting flowfield. R. L. Varwig (AIAA J, TN) 1448
Primary zone carbon monoxide levels for gas turbines. Part I—Premixed combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 463
Primary zone carbon monoxide levels for gas turbines. Part II—Liquid fuel combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 465
Recent developments on time-dependent calculation of nonequilibrium flows. C. P. Li (JSR, EN) 123
Strong planar shock waves generated by explosively-driven spherical implosions. I. I. Glass, S. K. Chan, and H. L. Brode (AIAA J) 367
Surface heat transfer in the flow of dissociated nitrogen. Norbert Peters (AIAA J, TN) 1747
Turbojet exhaust reactions in stratospheric flight. L. B. Anderson, J. W. Meyer, and W. J. McLean (AIAA J) 56
Turbulent swirling flame prediction. David G. Lilley (AIAA J) 219

Shock Waves and Detonations

Analysis of sonic boom flight test measurements near the shock wave extremity. G. T. Haglund and E. J. Kane (JA) 745
Basic limitation in microwave measurement of plasma temperature. A. Singer and J. M. Minkowski (AIAA J, TN) 1286
Blast initiation and propagation of cylindrical detonations in MAPP-air mixtures. R. S. Fry and J. A. Nicholls (AIAA J) 1703
Detonation propulsion for high pressure environments. Lloyd H. Back and Giulio Varsi (AIAA J) 1123
Engineering approximations for radiating nonequilibrium shock layers. Leland A. Carlson (AIAA J) 832
Experimental investigation of a cylindrical resonator. James H. T. Wu, P. Perry Ostrowski, Rafik A. Neemeh, and Patrick H. W. Lee (AIAA J) 1076
Flowfield analysis for successive oblique shock wave-turbulent boundary-layer interactions. Chen-Chih Sun and Morris E. Childs (JA) 54
Impact of space shuttle orbiter re-entry on mesospheric NO_X. R. S. Strolarski, R. J. Cicerone, and A. F. Nagy (AIAA J, TN) 395
Integral approximation for slender-body shock shapes in hypersonic flow. Thomas D. Fiorino and Maurice L. Rasmussen (AIAA J, TN) 1735
Inviscid supersonic far wake flow past pointed bodies. Prabhakara P. Rao (AIAA J, SYN) 421
Mach disk from underexpanded axisymmetric nozzle flow. I.-Shih Chang and W. L. Chow (AIAA J) 1079
Note on the shock standoff distance for a spherical body in supersonic flow, A. T. B. Guy (AIAA J, TN) 380
Prediction of the critical diameter of composite propellants. P. K. Salzman and T. C. Duncan (AIAA J) 985
Role of plasma boundary conditions in the comparison of electron plasma temperatures. A. Singer and J. M. Minkowski (AIAA J, TN) 876
Shock shapes of blunt bodies in hypersonic helium, air, and CO_2 flows. Charles G. Miller and John A. Moore (AIAA J, TN) 411
Shock tube for generating weak shock waves. W. Garen, R. Synofzik, and A. Frohn (AIAA J, TN) 1132
Shock wave boundary-layer interactions in laminar transonic flow. H. M. Brilliant and T. C. Adamson Jr. (AIAA J) 323
Simple technique for predicting Type III and IV shock interference. T. Taz Bramlette (AIAA J, TN) 1151
Stretch time of scribed metal diaphragms. S. K. Chan (AIAA J, TN) 1149
Strong planar shock waves generated by explosively-driven spherical implosions. I. I. Glass, S. K. Chan, and H. L. Brode (AIAA J) 367
Strong spherical blast waves in a dust-laden gas. Nathan Gerber and Joan M. Bartos (AIAA J, TN) 120
Structure of shock waves in cylindrical ducts. Paul J. Waltrup and Frederick S. Billig (AIAA J, TC) 736
Time-asymptotic solution for sphere-cones in hypersonic flow. Prabhakara P. Rao and James M. Lefferdo (AIAA J, TN) 386
Unsteadiness measurements in the flow through an oblique shock wave. E. R. Bergstrom, W. E. Boley, and S. Raghunathan (AIAA J, TN) 997
Variable energy blast wave measurements. P. M. Sherman and D. Gell (AIAA J, TN) 117
Wall shear and boundary-layer measurements in shock separated flow. Paul J. Waltrup and James M. Cameron (AIAA J, TN) 878

Subsonic and Transonic Flow

Airfoil design for high tip speed compressors. G. David Huffman and P. C. Tramm (JA) 682
Analysis of embedded shock waves calculated by relaxation methods. Earll M. Murman (AIAA J) 626
Comment on "Analysis of embedded shock waves calculated by relaxation methods." Tsze C. Tai (AIAA J, TC) 735
——Reply by author to T. C. Tai. Earll M. Murman (AIAA J, TC) 736
Analysis of high-aspect ratio jet-flap wings of arbitrary geometry. P. B. S. Lissaman (JA) 259
Application of holographic interferometry to density field determination in transonic corner flow. R. A. Kosakoski and D. J. Collins (AIAA J) 767
Application of turbulence model equations to axisymmetric wakes. W. S. Lewellen, M. Teske, and Coleman duP. Donaldson (AIAA J) 620
Boundary conditions and uniqueness in internal gas dynamic flows. Anthony A. Gunz and Raymond A. Serra (AIAA J, SYN) 263
Boundary-layer transition on cones near Mach One. J. Leith Potter (AIAA J, TN) 570
Calculation of nonlinear lift and pitching moment coefficients for slender wing-body combinations. H. Otto (JA, EN) 489
Calculation of unsteady transonic aerodynamics for oscillating wings with thickness. S. Y. Ruo, E. Carson Yates Jr., and J. G. Theisen (JA) 601
Comment on "A criterion for assessing wind-tunnel wall interference at Mach 1." Earll M. Murman and Frank W. Steinle Jr. (JA, EN) 782
——Reply by author to E. M. Murman and F. W. Steinle Jr. Theodore R. Goodman (JA, EN) 783
Compressibility effects in unsteady thin-airfoil theory. Roy K. Amiet (AIAA J, TN) 252
Compressor and distortion estimates using parallel compressor theory and stall delay. James A. Korn (JA, EN) 584
Computation of steady nozzle flow by a time-dependent method. Michael C. Cline (AIAA J, SYN) 419
Conceptual study of leading-edge-vortex enhancement by blowing, A. R. G. Bradley and W. O. Wray (JA) 33
Development of the Viking parachute configuration by wind-tunnel investigation. Sy Steinberg, Paul M. Siemers III, and Robert G. Slayman (JSR) 101
Evaluation of drag integral using cubic splines. R. M. James and V. D. Panico (JA, EN) 494
Experimental and theoretical investigations in two-dimensional transonic flow. Donald J. Collins and James A. Krupp (AIAA J) 771
Experimental investigation of gas injection through a transverse slot into a subsonic cross flow. George Rudinger (AIAA J, TN) 566
Experimental studies of a Ludweig tube high Reynolds number transonic tunnel. R. F. Starr and C. J. Schueler (AIAA J, SYN) 267
Flight simulation characteristics of the Langley high Reynolds number cryogenic transonic tunnel. Robert A. Kilgore, Jerry B. Adcock, and Edward J. Ray (JA) 593
Inverse transonic flow calculations using experimental pressure distribution. Leland A. Carlson (AIAA J, TN) 571
Irrotational subsonic flow of an ideal gas in two-dimensional ducts—Optimal ducts and ducts with plane sonic exits. M. J. Cohen and H. Portnoy (AIAA J) 608
Laminar viscous-inviscid interactions at transonic speeds. Donald J. Collins (AIAA J, TN) 1146
Langley cryogenic high Reynolds number wind-tunnel program,

The. E. C. Polhamus, R. A. Kilgore, J. B. Adcock, and E. J. Ray (A/ A, Oct.) 30
Numerical solution of transonic flows about quasi-cylindrical configurations. Antonio Ferri, Sheldon Elzweig, and Paolo Baronti (AIAA J, TN) 1447
Oblique compressible Sears function. L. T. Filotas (AIAA J, TN) 1601
On the determination of the internal aerodynamics of compressors. B. A. Jones (PS, V. 34) 109
Particle flow in turbomachinery with application to laser-Doppler velocimetry. Barry R. Maxwell (AIAA J, SYN) 1297
Potential flow past annular aerofoils. V. Krishnamurthy and N. R. Subramanian (JA, EN) 712
Prediction of unsteady airloads for oblique olade-gust interaction in compressible flow. Sing Chu and Sheila E. Widnall (AIAA J) 1228
Radiation-gas dynamic shock layer coupling. Carl D. Engel and Richard C. Farmer (AIAA J, TN) 1144
Shock wave boundary-layer interactions in laminar transonic flow. H. M. Brilliant and T. C. Adamson Jr. (AIAA J) 323
Some aspects of airfoil stall in low-speed flow. Hsiao C. Kao (JA) 177
Subsonic flow into a downstream facing inlet. Theo G. Keith Jr. (JA, EN) 251
Transonic flow around symmetric aerofoils at zero incidence. D. Nixon (JA, EN) 122
Transonic inviscid flow over lifting airfoils by the method of integral relations. Tsze Cheng Tai (AIAA J) 798
Transonic wind-tunnel and flight buffet pressures on a swept wing. C. E. Lemley and R. E. Mullans (JA) 173
Unsteady subsonic aerodynamic loadings caused by control surface motions. W. S. Rowe, B. A. Winther, and M. C. Redman (JA) 45
Unsteady transonic flow analysis for low aspect ratio, pointed wings. K. R. Kimble, D. D. Liu, S. Y. Ruo, and J. M. Wu (AIAA J) 516
Use of slotted walls to reduce wind-tunnel boundary corrections in subsonic flow. A. G. Parker (AIAA J, TN) 1771

Supersonic and Hypersonic Flow

Aerodynamic and flight dynamic analysis of finned re-entry vehicles. John K. Kryvoruka and William T. Ashurst (JSR) 135
Analysis of compressible turbulent flow over a yawed cone. A. Robin Mowlem and Russell A. Smith (AIAA J, SYN) 1171
Boundary conditions and uniqueness in internal gas dynamic flows. Anthony A. Ganz and Raymond A. Serra (AIAA J, SYN) 263
Calculation of compressible turbulent free shear layers. Youn H. Oh (AIAA J, TN) 401
Calculation of the flow on a cone at high angle of attack. Stephen C. Lubard and William S. Helliwell (AIAA J) 965
Combined effects of nose bluntness and cone angle on unsteady aerodynamics. L. E. Ericsson, R. A. Guenther, W. R. Stake, and G. S. Olmsted (AIAA J, TN) 729
Comment on "A graphical method for the investigation of shock interference phenomena." Karl M. Forster (AIAA J, TC) 1167
——Reply by author to K. M. Forster. Davis H. Crawford (AIAA J, TC) 1168
Comment on "Hypersonic, viscous shock layer with chemical nonequilibrium for spherically blunted cones." E. W. Miner and Clark H. Lewis (AIAA J, TC) 124
——Reply by authors to E. W. Miner and C. H. Lewis. Sang-Wook Kang and Michael G. Dunn (AIAA J, TC) 127
Comment on "Spherically-symmetric supersonic source flow: A new use for the Prandtl-Meyer function." Ivan E. Beckwith (AIAA J, TC) 1615
——Reply by author to I. Beckwith. Walter F. Reddall III (AIAA J, TC) 1616
Comments on Crocco's solution and the independence principle for compressible turbulent boundary layers. Ivan E. Beckwith (AIAA J, TN) 245
Comparison of NASA helium tunnel transition data with noise-transition correlation. S. R. Pate (AIAA J, TC) 1615
Computation of steady nozzle flow by a time-dependent method. Michael C. Cline (AIAA J, SYN) 419
Correlation of attitude effects on slender vehicle transition. Lars E. Ericsson (AIAA J) 523
Correlation of peak heating in the reattachment region of separated flows. Richard D. Matthews and Jean J. Ginoux (AIAA J, TN) 397
Cross-hatching studies—A critical review. Rudolph J. Swigart (AIAA J, SA) 1301
Density survey in the hypersonic viscous shock layer on a sharp flat plate. J. M. Avidor and S. Lederman (AIAA J, TN) 993
Design and operation of aircraft to minimize their sonic boom. A. R. Seebass and A. R. George (JA) 509
Design of maximum thrust nozzles for nonequilibrium chemically reacting flow. Allan A. Taylor and Joe D. Hoffman (AIAA J, SYN) 1299
Electrostatic probe measurements of chemical injection effects during a re-entry flight test. D. T. Hayes, S. B. Herskovitz, J. F. Lennon, and J. L. Poirier (JSR) 388
Experimental study of separation from the base of a cone at supersonic speeds. Lyle D. Kayser and James E. Danberg (AIAA J, TN) 1607
Extension of the momentum integral method to three-dimensional viscous-inviscid interactions. M. P. Georgeff (AIAA J, TN) 1603
Finite element supersonic aerodynamics for oscillating parallel wings. Kari Appa and G. Charles C. Smith (JA, SYN) 433
Flight test base pressure results for sharp 8° cones. Richard G. Batt (AIAA J) 555
Flowfield analysis for successive oblique shock wave-turbulent boundary-layer interactions. Chen-Chih Sun and Morris E. Childs (JA) 54
Flowfield measurements in an asymmetric axial corner at $M = 12.5$. James R. Cooper and Wilbur L. Hankey Jr. (AIAA J) 1353
Flow properties in expansion tube with helium, argon, air, and CO_2. Charles G. Miller (AIAA J, TN) 564
Gas dynamic gain of supersonic thrust nozzles. Joe D. Hoffman and A. R. Maykut (JSR) 697
Hypersonic flow over blunted slender wedges. A. V. Murthy (JA, EN) 249
Hypersonic flow with viscous interaction over a sharp slender wedge. Czeslaw M. Rodkiewicz (AIAA J, SYN) 7
Hypersonic merged stagnation shock layers. Part I: Adiabatic wall case. A. C. Jain and V. Adimurthy (AIAA J) 342
Hypersonic merged stagnation shock layers. Part II: Cold Wall case. A. C. Jain and V. Adimurthy (AIAA J) 348
Improved static probe design, An. S. Z. Pinckney (AIAA J, TN) 562
Incipient separation of axially symmetric hypersonic turbulent boundary layers. G. T. Coleman and J. L. Stollery (AIAA J, TN) 119
Integral approximation for slender-body shock shapes in hypersonic flow. Thomas D. Fiorino and Maurice L. Rasmussen (AIAA J, TN) 1735
Inviscid supersonic far wake flow past pointed bodies. Prabhakara P. Rao (AIAA J, SYN) 421
Langley cryogenic high Reynolds number wind-tunnel program, The. E. C. Polhamus, R. A. Kilgore, J. B. Adcock, and E. J. Ray (A/ A, Oct.) 30
Laser cavity density changes with kinetics of energy release. Oscar Biblarz and Allen E. Fuhs (AIAA J) 1083
Mach disk from underexpanded axisymmetric nozzle flow. I.-Shih Chang and W. L. Chow (AIAA J) 1079
Mean flow development and surface heating for an attaching compressible free shear layer. David H. Rudy and Stanley F. Birch (JSR, EN) 348
Moments and forces on general convex bodies in hypersonic flow. Jack Pike (AIAA J) 1241
Momentum integral method for viscous-inviscid interactions with arbitrary wall cooling. Michael P. Georgeff (AIAA J) 1393
New diagnostic technique for the study of turbulent boundary-layer separation. C. C. Horstman and F. K. Owen (AIAA J, TN) 1436
Note on the shock standoff distance for a spherical body in supersonic flow, A. T. B. Guy (AIAA J, TN) 380
Numerical computation of hypersonic viscous flow over a sharp leading edge. J. C. Tannehill, R. A. Mohling, and J. V. Rakich (AIAA J, SYN) 129
On the accuracy of Whitham's method. G. I. Zahalak and M. K. Myers (AIAA J) 203
Planetary entry aerothermodynamics. Part I. Technology requirements and experimental facilities. Walter B. Olstad (A/ A, Nov.) 58
Planetary entry aerothermodynamics: Part II. Computational analyses and flight experience. Walter B. Olstad (A/ A, Dec.) 55
Potential flow past annular aerofoils. V. Krishnamurthy and N. R. Subramanian (JA, EN) 712
Recent developments on time-dependent calculation of nonequlibrium flows. C. P. Li (JSR, EN) 123
Shock capturing numerical method for calculating supersonic flows. F. Walkden, G. T. Laws, and P. Caine (AIAA J) 642
Shock shapes of blunt bodies in hypersonic helium, air, and CO_2 flows. Charles G. Miller and John A. Moore (AIAA J, TN) 411
Simple technique for predicting Type III and IV shock interference. T. Taz Bramlette (AIAA J, TN) 1151
Simulation of real-gas effects for Mars entry. James L. Hunt, Robert

A. Jones, and Raymond E. Midden (JSR, EN) 62
Simultaneous Raman and laser velocimeter measurements. M. E. Hillard Jr., W. W. Hunter Jr., J. F. Meyers, and W. V. Feller (AIAA J, TN) 1445
Slot heating associated with roll control fins. T. Taz Bramlette (JSR, EN) 797
Sonic boom of hypersonic vehicles. Y. S. Pan and W. A. Sotomayer (AIAA J, ERR) 416
Strong spherical blast waves in a dust-laden gas. Nathan Gerber and Joan M. Bartos (AIAA J, TN) 120
Study of compressible potential and asymptotic viscous flows for corner ragion, A. K. N. Ghia and R. T. Davis (AIAA J) 355
——Study of compressible potential and asymptotic viscous flows for corner region, A. K. N. Ghia and R. T. Davis (AIAA J, ERR) 1456
Supersonic flow in the corner formed by two intersecting wedges. Paul Kutler (AIAA J, SYN) 577
Supersonic, turbulent boundary-layer separation. C. Herbert Law (AIAA J) 794
Surface heat transfer in the flow of dissociated nitrogen. Norbert Peters (AIAA J, TN) 1747
Swept-slot film-cooling effectiveness in hypersonic turbulent flow. Jerry N. Hefner and Aubrey M. Cary Jr. (JSR, EN) 351
Time-asymptotic solution for sphere-cones in hypersonic flow. Prabhakara P. Rao and James M. Lefferdo (AIAA J, TN) 386
Transition effects on slender vehicle stability and trim characteristics. Lars E. Ericsson (JSR) 3
——Errata: Transition effects on slender vehicle stability and trim characteristics. Lars E. Ericsson (JSR) 448
Turbulence measurements in a compressible boundary layer. William C. Rose (AIAA J) 1060
Turbulence measurements in a Mach 2.9 boundary layer using laser velocimetry. Dennis A. Johnson (AIAA J, TN) 711
Turbulent boundary-layer flow separation measurements using holographic interferometry. Albert G. Havener and Roger J. Radley Jr. (AIAA J) 1071
Two-layer model of turbulent boundary layers. Barry L. Reeves (AIAA J) 932
Unsteadiness measurements in the flow through an oblique shock wave. E. R. Bergstrom, W. E. Boley, and S. Raghunathan (AIAA J, TN) 997
Unsteady flow downstream of an airfoil oscillating in a supersonic stream. Joseph M. Verdon (AIAA J, TN) 999
Value of Mach angle for a given Prandtl-Meyer angle. William J. H. Smithey (AIAA J, TN) 1596
Vortex-induced heating to a cone-cylinder body at Mach 6. Jerry N. Hefner (JSR, EN) 127
Vortex-induced heating to cone flaps at Mach 6. Jerry N. Hefner and Allan H. Whitehead Jr. (JSR, EN) 200
Wind-tunnel study of spinning conical disk decelerators at Mach 4, A. Antoni K. Jakubowski (JSR) 141

Viscous Nonboundary-Layer Flows

Application of turbulence model equations to axisymmetric wakes. W. S. Lewellen, M. Teske, and Coleman duP. Donaldson (AIAA J) 620
Approximate method for estimating wake vortex strength. John E. Fidler (AIAA J) 633
Calculation of low Reynolds number flow past a square protuberance. Clarence W. Kitchens Jr. (AIAA J, TN) 1005
Calculation of the flow on a cone at high angle of attack. Stephen C. Lubard and William S. Helliwell (AIAA J) 965
Comment on "Finite element structural analysis of local instability." W. H. Wittrick (AIAA J, TC) 123
——Reply by author to W. H. Wittrick. J. S. Przemieniecki (AIAA J, TC) 124
Comment on "Hypersonic viscous shock layer with chemical nonequilibrium for spherically blunted cones." E. W. Miner and Clark H. Lewis (AIAA J, TC) 124
——Reply by authors to E. W. Miner and C. H. Lewis. Sang-Wook Kang and Michael G. Dunn (AIAA J, TC) 127
Effect of the adverse pressure gradient on vortex breakdown. Turgut Sarpkaya (AIAA J) 602
Experimental wake flow properties of a Viking '75 entry vehicle. James F. Campbell and Clarence A. Brown Jr. (JSR) 11
Flowfield in the combustion chamber of a solid propellant rocket motor. R. Dunlap, P. G. Willoughby and R. W. Hermsen (AIAA J, TN) 1440
Hypersonic merged stagnation shock layers. Part I: Adiabatic wall case. A. C. Jain and V. Adimurthy (AIAA J) 342
Hypersonic merged stagnation shock layers. Part II: Cold wall case. A. C. Jain and V. Adimurthy (AIAA J) 348
Investigation of laminar flow in a porous pipe with variable wall suction. L. S. Galowin, L. S. Fletcher, and M. J. DeSantis (AIAA J) 1585
Navier-Stokes solutions for flow past a class of two-dimensional semi-infinite bodies. U. Ghia and R. T. Davis (AIAA J) 1659
Numerical solution of three-dimensional Navier-Stokes equations showing trailing tip vortices. J. F. Thompson, S. P. Shanks, and J. C. Wu (AIAA J) 787
Numerical study of unsteady viscous flow past a lifting plate. Robert A. Schmall and Robert B. Kinney (AIAA J) 1566
Prediction of yawing force at high angle of attack. Andrew B. Wardlaw Jr. (AIAA J, TN) 1142
Slot heating associated with roll control fins. T. Taz Bramlette (JSR, EN) 797
Torque development on a spherical body due to spin up of the concentric spherical container. Ram Sinha (AIAA J, TN) 404
Transpiration nosetip coolant flow control. John R. Schuster, Roger A. Glickman, and Douglas R. Hender (JSR) 152
Viscous flow over spinning cones at angle of attack. T. C. Lin and S. G. Rubin (AIAA J) 975

Wave Motion and Sloshing

Analytical model for liquid rocket propellant feedline dynamics. Jesse L. Holster and William J. Astleford (JSR) 180
P^{3}G—A new dynamic distortion generator. P. H. Kutschenreuter Jr., T. P. Collins, and W. F. Vier III (JA) 344
Stability of partially lined combustors with distributed combustion. M. R. Baer, C. E. Mitchell, and W. R. Espander (AIAA J) 475

INTERDISCIPLINARY TOPICS

Aerospace Management

Concorde: Testing the market. Richard D. FitzSimmons (A/ A, July-August) 46
Ground testing and simulation—An overview: Part I: Economics. Jack D. Whitfield (A/ A, June) 54
High-low mix—Solution or problem? George Spangenberg (A/ A, Sept.) 18
Interactive-TV networking: A modest proposal for using domestic communication satellites. Rodman Davis (A/ A, April) 62
Looking before you leap—The state of the art of technology assessment. Herbert Fox (A/ A, Nov.) 40
Lower space costs mean more space flight. A. O. Tischler (A/ A, June) 22
Managerial implications of computerized aircraft design synthesis. William L. Straub Jr. (JA) 129
Mariner Venus/ Mercury 1973: A strategy of cost control. John R. Biggs and Walter J. Downhower (A/ A, June) 48
Methodology for reliability-cost-risk analysis of satellite networks. J. S. Greenberg and G. A. Hazelrigg Jr. (JSR) 650
More national security from the defense dollar: Project ACE. Samuel C. Phillips (A/ A, Dec.) 44
Optimal scheduling of a satellite control network using zero-one linear programing. L. C. Westphas (JSR, EN) 731
Parameters of technological growth: What makes an optimist? Toufiq F. Siddiqi (A/ A, June) 15
Rating aircraft on energy. Dal V. Maddalon (A/ A, Dec.) 26
Restoring private enterprise to the defense industry. Murray L. Weidenbaum (A/ A, Nov.) 15
Unified view of the R&D economy, A. Frederick L. Bagby (A/ A, Jan.) 32

Aerospace Technology Utilization

Combustion R&D—Key to our energy future. Antoni K. Oppenheim and Felix J. Weinberg (A/ A, Nov.) 22
Design of the INTELSAT IV transponder. S. B. Bennett and I. Dostis (PS, V. 33) 373
European communication satellite program, The. Rene C. Collette (PS, V. 32) 213
Implication of satellite technology for television broadcasting in Canada. B. C. Blevis and M. L. Card (PS, V. 32) 281
Looking before you leap—The state of the art of technology assessment. Herbert Fox (A/ A, Nov.) 40
Mariner IX optical navigation using Mars lit limb. Navin Jerath and Hiroshi Ohtakay (JSR) 505
Opportunities for U.S.-European cooperation in application satellite programs. John A. Johnson (PS, V. 32) 47
Performance of a digital adaptive echo canceller in a simulated satellite

circuit environment. H. G. Suyderhoud and M. Onufry (PS, V. 33) 455
Raman scattering applied to hypersonic air flow. Mervin E. Hillard Jr., E. Leon Morrisette, and M. Lawrence Emory (AIAA J, TN) 1160
RPVs—Exploring civilian applications. Thomas J. Gregory, Rodney O. Bailey, and Walter P. Nelms (A/ A, Sept.) 38
Satellites for U. S. education: Needs, opportunities, and systems. R. P. Morgan, J. P. Singh, B. D. Anderson, and E. Greenberg (PS, V. 32) 441
Widening ERTS applications. Enrico P. Mercanti (A/ A, May) 28

Atmospheric, Space, and Oceanographic Sciences

Aircraft turbine engine emissions under simulated supersonic flight conditions. R. C. German, C. E. Robinson, M. D. High, and R. F. Lauer (JA) 472
Analysis of laser measurement of high-altitude aircraft emissions. Philip Brockman and R. K. Seals Jr. (AIAA J) 651
Analysis of tunable laser heterodyne radiometry: Remote sensing of atmospheric gases. R. K. Seals Jr. (AIAA J) 1118
Comparison of three techniques for solving the radiative transport equation. J. A. Roux and A. M. Smith (PS, V. 35) 3
Dispersion and dilution of jet aircraft exhaust at high-altitude flight conditions. James D. Holdeman (JA) 483
Effect of boundary conditions on the radiative reflectance of dielectric coatings. J. A. Roux, A. M. Smith, and F. Shahrokhi (PS, V. 35) 131
Engineering models of the Venus atmosphere. Richard B. Noll and Michael B. McElroy (JSR) 21
Exotic astrophysics. Herbert Friedman (A/ A, April) 20
Experimental investigation of small scale transport mechanisms in the stratosphere. N. W. Rosenberg, R. E. Good, W. K. Vickery, and E. M. Dewan (AIAA J) 1094
Exploring Jupiter and its satellites with an orbiter. J. C. Beckman, J. R. Hyde, and S. I. Rasool (A/ A, Sept.) 24
Impact of space shuttle orbiter re-entry on mesospheric NO_x. R. S. Stolarski, R. J. Cicerone, and A. F. Nagy (AIAA J, TN) 395
Infrared astronomy and the shuttle. Martin Harwit (A/ A, Oct.) 23
Jupiter's magnetosphere as observed with Pioneer 10. James A. Van Allen and Roger F. Randall (A/ A, July-August) 14
Lightning and the Apollo 17/ Saturn V exhaust plume. E. P. Krider, R. C. Noggle, M. A. Uman, and R. E. Orville (JSR) 72
Mars emerging from a generation of discoveries, The. Richard Goody (A/ A, Jan.) 24
Mathematical modeling for the detection of fish by an airborne laser. David L. Murphree, Clayborne D. Taylor, and Ronald W. McClendon (AIAA J) 1686
Numerical solution of a nonlinear integral equation by the use of step functions: III. Continuous solutions. Kenneth K. Yoshikawa (AIAA J, TN) 1769
Operation Kohoutek preliminary results. George R. Carruthers (A/ A, Oct.) 42
Options for Mars exploration. E. Brian Pritchard, Edwin F. Harrison, and Jesse W. Moore (A/ A, Feb.) 46
Orbit analysis for coastal zone oceanography observations. Edwin F. Harrison and Richard N. Green (JSR, SYN) 131
Perturbations of the stratosphere and mesosphere by aerospace vehicles. R. C. Whitten and R. P. Turco (AIAA J) 1110
Pioneer Venus mission plan for atmospheric probes and an orbiter. John W. Dyer, Robert R. Nunamaker, John R. Cowley Jr., and Robert W. Jackson (JSR) 710
Radiative transport analysis for plane geometry with isotropic scattering and arbitrary temperature. J. A. Roux and A. M. Smith (AIAA J) 1273
Scattering properties of ice particles formed by release of H_2O in vacuum. Thomas T. Kassal (JSR, EN) 54
Some response characteristics of parabolic hot films in water. A. R. M. Nowell (JH, EN) 169
Space systems summaries: Pioneer spacecraft. (A/ A, Feb.) 79
Space systems summaries: Ranger. (A/ A, April) 77
Spherical harmonics approximation for radiative transfer in polluted atmospheres. R. W. Bergstrom Jr. and R. Viskanta (PS, V. 35) 23
Statistical models for Jupiter's troposphere and the NH_3-H_2O cloud systems. William Sidney Cook (JSR) 512
Superpressure balloons for long-duration flight. James D. Kurfess (A/ A, April) 68
Vertical profiles of molecular H_2 and CH_4 in the stratosphere. D. H. Ehhalt and L. E. Heidt (AIAA J) 822
Widening ERTS applications. Enrico P. Mercanti (A/ A, May) 28

Checkout Systems

Engine condition monitor system to detect foreign object damage and crack development. H. R. Hegner (PS, V. 34) 531
Inflight engine condition monitoring system. G. C. Van Cleve (PS, V. 34) 471
In-line oil monitor and its role in engine condition monitoring, The. George F. Skala (PS, V. 34) 499
Study of a flight monitor for jet engine disk cracks using the critical length criterion of fracture mechanics. John P. Barranger (PS, V. 34) 325
Systems engineering approach to effective engine condition monitoring, A. David W. Leiby (PS, V. 34) 481

Computer Technology and Computer Simulation Techniques

Application of computer-aided aircraft design in a multidisciplinary environment. Robert E. Fulton, J. Sobieszczanski, O. Storaasli, Emma Jean Landrum, and D. Loendorf (JA, SYN) 369
Arrested landing studies for STOL aircraft. Chen-Chung Hsin (JA) 159
Calculating two-dimensional chemically reacting flows. Carl Scaccia and Lawrence A. Kennedy (AIAA J) 1268
Closed-loop flight vehicle qualification testing. Robert W. Phillips and John K. Kryvoruka (JSR, SYN) 355
Comment on "Criteria for selecting curves for fitting to data." Robert G. Easterling (AIAA J, TC) 733
——Reply by author to R. G. Easterling. T. J. Dylewski (AIAA J, TC) 734
Computer illustrations of Earth satellite orbits. Donald L. Hitzl (JSR, EN) 346
Determination of allowable tolerances for asymmetries of a free rolling missile. Albert Kirszenblat (JSR) 295
Digital fly-by-wire: Computers lead the way. Donald C. Fraser and Philip G. Felleman (A/ A, July-August) 24
Evaluation of optimization techniques for applications in engineering design. K. A. Afimiwala and R. W. Mayne (JSR, SYN) 673
Explicit numerical method for solution of heat-transfer problems. John A. Segletes (AAA J, SYN) 1463
Interdisciplinary computer analyses of three-dimensional solids defined by polyhedral surfaces. A. M. Messner, G. Q. Taylor, and C. F. Price (JSR, EN) 52
Least squares nonlinear parameter estimation by the iterative continuation method. A. Kirszenblat and M. Chetrit (AIAA J, TN) 1751
Optimum vibration isolation system design using linear programing. Peter A. Orlin and Malcolm A. Cutchins (AIAA J) 1517
Programing approach to optimal structural design using structural indices, A. Leonard Spunt (AIAA J, TN) 865
Reliability and quality control of production engineering computer programs. S. D. Hansen and Q. D. McHarg (JA) 232
Simulation of ground facility for testing ramjets under flight conditions. William Mitchell (JSR, SYN) 449
Simulation of the speed control for gas turbines using vibrating reed regulators. Jacques Dat, Jean Fabre, and Librer Sanjurjo (JA) 624
Spacecraft computers. A. J. Aukstikalnis (A/ A, July-August) 33
Suboptimal linear filtering. Edward M. Duiven (JSR, EN) 196
System performance prediction by modeling test data in digital simulations. Harold L. Pastrick, Randy J. York, and Alexander C. Jolly (JSR, SYN) 133
Time-temperature simulation in low-pressure ignition of hypergolic liquids. Michel A. Saad and Samuel R. Goldwasser (AIAA J, SYN) 11
Transformation for the numerical integration of systems of the form $X(t) = F[X(t)]$. G. J. Lastman (AIAA J, TN) 1430

Electric Power Generation Research

Cost-effective radioisotope thermoelectric generator designs involving Cm-244 and Pu-238 heat sources. Philip E. Eggers and John L. Ridihalgh (JSR) 704
Effect of finite chemical reaction rates on heat transfer to the walls of combustion-driven supersonic MHD generator channels. J. W. Daily, J. Raeder, and G. Zankl (AIAA J, TN) 403
Effective electrical conductivity and related properties of a nonequilibrium high pressure MHD plasma. G. Brederlow and K. J. Witte (AIAA J) 83
Establishment of quasi-steady conditions in a blow-down nonequilibrium MHD generator. J. J. Rosciszewski and T. T. Yeh (AIAA J) 1021
Feasibility of large-scale orbital solar/ thermal power generation. John T. Patha and Gordon R. Woodcock (JSR) 409
Local thermal equilibrium in a transient arc. David M. Benenson and August A. Cenkner Jr. (AIAA J, TN) 116
Performance of a Faraday rare gas alkali MHD generator. G. Brederlow, K. J. Witte, and H. Zinko (AIAA J) 481
Stability of nonequilibrium MHD plasma in the regime of fully ionized seed. Takashi Nakamura and Wolfgang Riedmuller (AIAA J) 661
Suppression of ionization instability in an MHD disk generator. Susumu Shoda and Hiroyuki Yamasaki (AIAA J, TN) 1763

Lasers

Analysis of laser measurement of high-altitude aircraft emissions. Philip Brockman and R. K. Seals Jr. (AIAA J) 651
Analysis of tunable laser heterodyne radiometry: Remote sensing of atmospheric gases. R. K. Seals Jr. (AIAA J) 1118
Application of laser velocimeters for flow measurement. A. E. Lennert, J. O. Hornkohl, and H. T. Kalb (PS, V. 34) 77
Computations of CO_2 laser radiation absorption in SF_6-air boundary layers. John D. Anderson Jr. (AIAA J) 1527
Effect of kinetic rate uncertainties on gasdynamic laser gain and energy predictions. John D. Anderson Jr. (AIAA J) 1699
Fiber optic and laser digital pressure transducers. Gordon W. Margerum, John W. Leonard, and Allen E. Fuhs (PS, V. 34) 217
Gas concentration measurement by coherent Raman anti-Stokes scattering. P. R. Regnier, F. Moya, and J. P. E. Taran (AIAA J) 826
Holography of nozzles, jets, and spraying systems. J. D. Trolinger, R. A. Belz, and J. E. O'Hare (PS, V. 34) 249
Investigation of the use of holography in studying supersonic flow in inlets. W. C. Spring III and W. C. Ragsdale (PS, V. 34) 95
Laser absorption and gain by Ar^+ -ion states in a supersonic expansion. David L. Murphree, Richard P. Carter, and Dennis R. Smith (AIAA J, TN) 1732
Laser burnthrough time reduction due to tangential airflow—An interpolation formula. R. L. Johnson and J. D. O'Keefe (AIAA J) 1106
Laser cavity density changes with kinetics of energy release. Oscar Biblarz and Allen E. Fuhs (AIAA J) 1083
Laser velocimeter system development and testing. Jeffrey A. Asher (PS, V. 34) 141
Mathematical modeling for the detection of fish by an airborne laser. David L. Murphree, Clayborne D. Taylor, and Ronald W. McClendon (AIAA J) 1686
Measurements in the near field of supersonic nozzles for chemical laser systems. D. L. Whitfield, J. W. L. Lewis, and W. D. Williams (AIAA J, TN) 870
Photographic observations of CW HF chemical laser reacting flowfield. R. L. Varwig (AIAA J, TN) 1448
Propulsion by absorption of laser radiation. A. N. Pirri, M. J. Monsler, and P. E. Nebolsine (AIAA J) 1254
Raman scattering applied to hypersonic air flow. Mervin E. Hillard Jr., E. Leon Morrisette, and M. Lawrence Emory (AIAA J, TN) 1160
Role of radiative transport in the propagation of laser supported combustion waves. J. P. Jackson and P. E. Nielsen (AIAA J) 1498
Simultaneous Raman and laser velocimeter measurements. M. E. Hillard Jr., W. W. Hunter Jr., J. F. Meyers, and W. V. Feller (AIAA J, TN) 1445
Small signal gain calculations for high-flow CO discharge lasers. Neill S. Smith, H. A. Hassan, and Roy M. McInville (AIAA J, SYN) 1619
System performance prediction by modeling test data in digital simulations. Harold L. Pastrick, Randy J. York, and Alexander C. Jolly (JSR, SYN) 133
Transient molecular concentration measurements in turbulent flows using Rayleigh light scattering. S. C. Graham, A. J. Grant, and J. M. Jones (AIAA J, TN) 1140

Law, History, Policy, and Sociology

Aerodynamics Hanoi Hilton style. Ben M. Pollard (A/ A, Sept.) 71
Apollo-Soyuz: A substantial engagement. Arnold W. Frutkin (A/ A, Dec.) 24
Design for survival. David Hazen (A/ A, Feb.) 57
More national security from the defense dollar: Project ACE. Samuel C. Phillips (A/ A, Dec.) 44
Opportunities for U.S.-European cooperation in application satellite programs. John A. Johnson (PS, V. 32) 47
Proposal: For an International Solar System Decade. William H. Pickering (A/ A, Sept.) 22
UFO reports from AIAA members. Peter A. Sturrock (A/ A, May) 60

Navigation, Control, and Guidance Theory

Analytical approach to orbit determination in the presence of model errors. Bob E. Schutz (AIAA J) 298
Comment on "Comparison of linear and Riccati equations used to solve optimal control problems." E. D. Denman and Paul Nelson Jr. (AIAA J, TC) 575
Comment on "Neighboring extremals for optimal control problems." Lincoln J. Wood (AIAA J, TC) 1452
——Reply by authors to L. J. Wood. C. E. Hymas, R. K. Cavin III, and D. Colunga (AAAA J, TC) 1454
Comparison of statistical orbit determination methods. B. E. Schutz, J. D. McMillan, and B. D. Tapley (AIAA J, SYN) 1465
Competitive evaluation of failure detection algorithms for strapdown redundant inertial instruments. James C. Wilcox (JSR) 525
Contribution to regularization to optimal trajectory problems. Klaus J. Schwenzfeger (AIAA J) 850
Design of a digital controller for spinning flexible spacecraft. B. C. Kuo, S. M. Seltzer, G. Singh, and R. A. Yackel (JSR) 584
Design principles for digital autopilot synthesis. Howard Berman and Richard Gran (JA) 414
Digital filters using observers applied to ICBM control system design. J. M. Johnson Jr. (JSR) 498
Dynamics and configuration control of two-body satellite systems. Willem Stuiver (JSR, SYN) 545
Filtering and smoothing simulation results for CIRIS inertial and precision ranging data. William S. Widnall (AIAA J) 856
Fine pointing system for large orbiting telescopes. Werner O. Schiehlen (JSR, SYN) 273
Generalized perturbation method for solving two-point boundary-value problems. R. G. Gottlieb, D. G. Hull, and W. T. Fowler (AIAA J) 648
Homicidal chauffeur, The. A. W. Merz (AIAA J, SYN) 259
Iterative explicit guidance for low thrust spaceflight. Robert A. Jacobson and William F. Powers (JSR) 494
Limiting performance of ground transportation vehicles subject to transient loading. Walter D. Pilkey and Bo Ping Wang (AIAA J, SYN) 1011
Low order observer for a linear functional of the state vector. Peter Murdoch (AIAA J, TN) 1288
Mariner IX optical navigation using Mars lit limb. Navin Jerath and Hiroshi Ohtakay (JSR) 505
Minimum time and minimum fuel flight path sensitivity. M. A. Nichols and J. Karl Hedrick (JA) 320
Nonlinear programing by projection-restoration applied to optimal geostationary satellite positioning. W. A. Gruver and N. H. Engersbach (AIAA J) 1715
Optimal guidance for aerodynamically controlled re-entry vehicles. Miguel A. de Virgilio, Gerald R. Wells, and Earl E. Schiring (AIAA J) 1331
Optimal guidance with maneuvering targets. Robert B. Asher and John P. Matuszewski (JSR, EN) 204
Optimal guidance for the space shuttle transition. Robert F. Stengel (JSR) 173
Optimum skewed redundant inertial navigators. Arthur J. Pejsa (AIAA J) 899
Orbit determination capability analysis for the Mariner-Jupiter-Saturn 1977 mission. G. A. Ransford, C. E. Hildebrand, and V. J. Ondrasik (JSR) 658
Orbit trim strategies for the 1975 Mars Viking mission. Gerald R. Hintz (JSR) 783
Practical aspects of electrostatic stabilization. Ralph Markson (A/ A, April) 44
Second-order optimality conditions for the Bolza problem with both endpoints variable. Lincoln J. Wood (JA) 212
Series expansion of the eccentricity for near parabolic orbits. N. X. Vinh (AIAA J, TN) 1281
Some aspects of collision avoidance. T. L. Vincent, E. M. Cliff, W. J. Grantham, and W. Y. Peng (AIAA J, SYN) 3
Square-root algorithm for evaluating mismodeled process noise. C. L. Thornton and S. G. Finley (JSR) 223
Stochastic optimal control of linear dynamic systems. Jason L. Speyer and Donald E. Gustafson (AIAA J, SA) 1013
Suboptimal linear filtering. Edward M. Duiven (JSR, EN) 196
Synthesis of a separate surface wing leveler. Jan Roskam and Samuel Henry (JA, SYN) 657
Terminal navigation analysis for the 1980 Comet Encke slow flyby mission. Robert A. Jacobson, James P. McDannell, and George C. Rinker (JSR) 590
Transfer function synthesis by state vector feedback. Peter Murdoch (AIAA J, TN) 1765
Transformation for the numerical integration of systems of the form $X(t) = F[X(t)]$.G. J. Lastman (AIAA J, TN) 1430

Reliability, Quality Control, and Maintainability

Competitive evaluation of failure detection algorithms for strapdown redundant inertial instruments. James C. Wilcox (JSR) 525
Engine aids and the metrologist syndrome. H. M. Snowball (PS, V. 34) 505
In-line oil monitor and its role in engine condition monitoring, The. George F. Skala (PS, V. 34) 499
Minuteman III liquid propulsion system storage surveillance program. Leonard Usiak and Philip Ramsden (JSR, EN) 792
Redundant configuration of electric propulsion systems for stationkeeping. D. Rex and B. Kohnecke (JSR) 488
Reliability and quality control of production engineering computer

programs. S. D. Hansen and Q. D. McHarg (JA) 232
Systems engineering approach to effective engine condition monitoring. David W. Leiby (PS, V. 34) 481
Thermal coupling measurement method. L. A. Rosenthal and V. J. Menichelli (JSR) 282

Research Facilities and Instrumentation

Acoustical levitation for space processing. Taylor G. Wang, Melvin M. Saffren, and Daniel D. Elleman (A/ A, July-August) 42
Application of laser velocimeters for flow measurements. A. E. Lennert, J. O. Hornkohl, and H. T. Kalb (PS, V. 34) 77
Comment on "Criteria for selecting curves for fitting to data." Robert G. Easterling (AIAA J, TC) 733
——Reply by author to R. G. Easterling. T. J. Dylewski (AIAA J, TC) 734
Considerations for the design of a second generation induction driven transonic wind tunnel. J. Braha, M. Salomon, A. Seginer, and J. Rom (JA) 729
Debris shielding during high-speed erosion. W. G. Reinecke (AIAA J, TN) 1592
Density survey in the hypersonic viscous shock layer on a sharp flat plate. J. M. Avidor and S. Lederman (AIAA J, TN) 993
Development of an MHD-augmented, high enthalpy, shock tunnel facility. S. R. Pate, L. G. Siler, D. W. Stallings, and D. A. Wagner (AIAA J) 289
Experiences in the design and application of turbine blade pyrometers. Herbert Katz (PS, V. 34) 409
Experimental studies of a Ludwieg tube high Reynolds number transonic tunnel. R. F. Starr and C. J. Schueler (AIAA J, SYN) 267
Fiber optic and laser digital pressure transducers. Gordon W. Margerum, John W. Leonard, and Allen E. Fuhs (PS, V. 34) 217
Flight simulation characteristics of the Langley high Reynolds number cryogenic transonic tunnel. Robert A. Kilgore, Jerry B. Adcock, and Edward J. Ray (JA) 593
Flow properties in expansion tube with helium, argon, air, and CO_2. Charles G. Miller (AIAA J, TN) 564
Ground testing and simulation—An overview: Part II: Aerodynamic testing. Bain Dayman Jr. and Anthony W. Fiore (A/ A, June) 56
Laser velocimeter system development and testing. Jeffrey A. Asher (PS, V. 34) 141
Measurement of instantaneous air angle and total temperature fluctuations behind transonic compressor rotors. Bruce V. Johnson, Henry V. Marman, John A. Brent, and Richard M. Hooper (PS, V. 34) 179
Method for producing a uniform, low Reynolds number jet. George C. Greene and Donald F. Brink (JSR, EN) 604
Modularized instrument system for turbojet engine test facilities. W. C. Nieberding and D. R. Englund Jr. (PS, V. 34) 205
On the determination of the internal aerodynamics of compressors. B. A. Jones (PS, V. 34) 109
On-the-shaft data systems for rotating engine components. Daniel J. Lesco, John C. Sturman, and William C. Nieberding (PS, V. 34) 131
Pyrometer for measurement of surface temeprature distribution on a rotating turbine blade. Donald R. Buchele and Daniel J. Lesco (PS, V. 34) 347
Raman scattering applied to hypersonic air flow. Mervin E. Hillard Jr., E. Leon Morrisette, and M. Lawrence Emory (AIAA J, TN) 1160
Response of a hot wire oscillating in a shear flow. R. H. Kirchhoff and R. A. Burbank (AIAA J, TN) 96
Response of miniature pressure transducers to fluctuations in supersonic flow. E. Grande and G. C. Oates (PS, V. 34) 3
Selected applications of a biaxial tiltmeter in the ground motion environment. G. L. Cooper and W. T. Schmars (JSR) 530
Simultaneous Raman and laser velocimeter measurements. M. E. Hillard Jr., W. W. Hunter Jr., J. F. Meyers, and W. V. Feller (AIAA J, TN) 1445
Some measurements on dynamic stall. A. G. Parker and J. Bicknell (JA) 371
Study of a flight monitor for jet engine disk cracks using the critical length criterion of fracture mechanics. John P. Barranger (PS, V. 34) 325
System for evaluation of F-15 inlet dynamic distortion. A. P. Farr and G. A. Schumacher (PS, V. 34) 59
Thrust measuring system for electrothermal thrusters. B. C. Barber (JSR) 549
Turbulence calibration of a hot wire anemometer. R. H. Kirchhoff and R. R. Safarik (AIAA J, TN) 710
Turbulence measurements in a Mach 2.9 boundary layer using laser velocimetry. Dennis A. Johnson (AIAA J, TN) 711
Wake growth and collapse in stratified flow. Gordon E. Merritt (AIAA J) 940

Safety

Acoustic backscatter radar system for tracking aircraft trailing vortices. Martin Balser, Charles A. McNary, and Arthur E. Nagy (JA) 556
Automatic detection and suppression of inlet buzz. L. O. Billig (PS, V. 34) 453
Computer simulation of near midair collisions in the terminal environment. Richard B. Jones and Frederick H. Lutze Jr. (JA) 457
Review of the compatibility of structural materials with oxygen. Alan F. Clark and Jerome G. Hust (AIAA J, SA) 441
Visual perception of pilots in carrier landing. Theodore Goid (JA) 723

LAUNCH VEHICLE AND MISSILE (LV/ M) TECHNOLOGY

LV/ M Aerodynamic Heating

Aerodynamic heat transfer to RSI tile surfaces and gap intersections. James C. Dunavant and David A. Throckmorton (JSR, EN) 437
Calorimeter measurement of heat transfer at hypersonic conditions. Mitchell R. Wool, Andrew J. Murphy, and Roald A. Rindal (JSR) 363
Evaluation of aerodynamic heating uncertainties for space shuttle. R. V. Masek, D. Hender, and J. A. Forney (JSR) 368
Generalized flow in gaps and slots including the effects of ablation. Larry Cooper and Kurt E. Putz (JSR) 287
Method for calculating aerodynamic heating on sounding rocket tangent ogive noses. L. D. Wing (JSR) 357
Prediction of turbulent heat transfer and pressure on swept leading edges. Hugh W. Coleman and E. Clark Lemmon (JSR) 376
Radial base heat-transfer gradients in turbulent flow. Bruce M. Bulmer (JSR, EN) 798
Transpiration nosetip coolant flow control. John R. Schuster, Roger A. Glickman, and Douglas R. Hender (JSR) 152
Vortex-induced heating to a cone-cylinder body at Mach 6. Jerry N. Hefner (JSR, EN) 127
Vortex-induced heating to cone flaps at Mach 6. Jerry N. Hefner and Allan H. Whitehead Jr. (JSR, EN) 200

LV/ M Aerodynamics

Analysis of the nonlinear rolling motion of finned missiles. Charles J. Cohen, Thomas A. Clare, and Frank L. Stevens (AIAA J) 303
Approximate method for estimating wake vortex strength. John E. Fidler (AIAA J) 633
Calculation of nonlinear lift and pitching moment coefficients for slender wing-body combinations. H. Otto (JA, EN) 489
Contribution of a wall shear stress to the Magnus effect on nose shapes. Ira D. Jacobson (AIAA J, TN) 1003
Cylindrical wing-body configurations for space-limited applications. D. E. Swanson and C. T. Crowe (JSR, EN) 60
Moments and forces on general convex bodies in hypersonic flow. Jack Pike (AIAA J) 1241

LV/ M Configurational Design

Similarity laws for missiles of minimum ballistic factor. V. B. Tawakley (JSR, EN) 671

LV/ M Dynamics and Control

Closed-loop flight vehicle qualification testing. Robert W. Phillips and John K. Kryvoruka (JSR, SYN) 355
Digital filters using observers applied to ICBM control system design. J. M. Johnson Jr. (JSR) 498
Effect of transverse products of inertia on re-entry vehicle trim angle behavior. Albert E. Hodapp Jr. (JSR, EN) 733
Effects of unsymmetrical stability derivative characteristics on re-entry vehicle trim angle behavior. Albert E. Hodapp Jr. (JSR) 300
On Murphy's stability criterion. J. P. Sharma (JSR, EN) 432
Optimal guidance for aerodynamically controlled re-entry vehicles. Miguel A. de Virgilio, Gerald R. Wells, and Earl E. Schiring (AIAA J) 1331

LV/ M Dynamics, Uncontrolled

Analysis aof the nonlinear rolling motion of finned missiles. Charles J. Cohen, Thomas A. Clare, and Frank L. Stevens. (AIAA J) 303
Analytical model for liquid rocket propellant feedline dynamics. Jesse L. Holster and William J. Astleford (JSR) 180
Attitude motion of a roll accelerated vehicle. Richard T. Theobald (JSR, EN) 857
Determination of allowable tolerances for asymmetries of a free rolling missile. Albert Kirszenblat (JSR) 295
Dynamics of sounding rockets at burnout. William C. Womack, Charles W.

Bert, and Farrell J. Perdreauville (JSR) 716
Minimization method for treating convergence in modal synthesis, A. T. K. Hasselman and Gary C. Hart (AIAA J) 316

LV/ M Fabrication

LV/ M Flight Testing

Flutter test analysis in the time domain using a recursive system representation. Jan Robert Wright (JA, EN) 774
Information content subsetting of highly correlated error sources. I. M. Weiss (AIAA J) 1726

LV/ M Fuel and Propellant Systems (Including Storage and Transfer)

Flow visualization of thermal stratification with localized heat sources. Thomas M. Lovrich, Sidney H. Schwartz, and Leroy A. Holmes (JSR) 664
Mars surface-to-orbit vehicles for sample return missions. William L. Weaver (JSR, EN) 426
Outgas dominated pressure distribution in a multilayer insulation system. J. T. Lin (AIAA J, TN) 1590
Review of the compatibility of structural materials with oxygen. Alan F. Clark and Jerome G. Hust (AIAA J, SA) 441
Studies on mixed fuels—Hydrazine and ethyl alcohol system. R. P. Rastogi, H. J. Singh, and K. Kishore (AIAA J, TN) 227

LV/ M Guidance Systems (Including Command and Information Systems)

Drift compensation and acceleration resolution for a rotating platform IMU. A. C. Liang and D. L. Kleinbub (JSR, SYN) 547
Guidance of a bank-to-turn missile with altitude control requirements. E. P. Cunningham (JSR, EN) 340
Optimal guidance for aerodynamically controlled re-entry vehicles. Miquel A. de Virgilio, Gerald R. Wells, and Earl E. Schiring (AIAA J) 1331
Selected applications of a biaxial tiltmeter in the ground motion environment. G. L. Cooper and W. T. Schmars (JSR) 530
Torque development on a spherical body due to spin up of the concentric spherical container. Ram Sinha (AIAA J, TN) 404

LV/ M Gust Loading and Wind Shear

Probability of first passage failure for stationary random vibration. J. B. Roberts (AIAA J) 1636

LV/ M Mission Studies and Economics

Comparison of advanced propulsion capabilities for future planetary missions. John C. Niehoff and Alan L. Friedlander (JSR) 566
High-speed computation of ascent trajectories within iterative loops using collocation methods. Peter R. Hempel (AIAA J, SYN) 1467
Methodology for reliability-cost-risk analysis of satellite networks. J. S. Greenberg and G. A. Hazelrigg Jr. (JSR) 650
Probability of crashing for a terrain-following missile. Edward P. Cunningham (JSR, EN) 257
Single-stage shuttles for ground launch and air launch. Robert Salkeld (A/ A, March) 52
Systems analysis of Titan family for orbiting multiple communication satellites. J. M. Edgar (PS, V.32) 405

LV/ M Propulsion System Integration

Coolant pressurization and expulsion for transpiration nosetips. Theodore E. Ward and John R. Schuster (JSR) 518
Development of the Astrobee F sounding rocket system. R. B. Jenkins, J. P. Taylor, and H. J. Honecker Jr. (JSR, EN) 56
Minuteman III liquid propulsion system storage surveillance program. Leonard Usiak and Philip Ramsden (JSR, EN) 792
Propulsion systems for single-stage shuttles. Rudi Beichel (A/ A, Nov.) 32

LV/ M Simulation

Closed-loop flight vehicle qualification testing. Robert W. Phillips and John K. Kryvoruka (JSR, SYN) 355
Debris shielding during high-speed erosion. W. G. Reinecke (AIAA J, TN) 1592

LV/ M Structural Design (Including Loads)

Buckling of short cylindrical shells under axial compression. D. Durban and A. Libai (AIAA J) 909
Comment on the equation for aeroelastic divergence of unguided launch vehicles. N. G. Humbad (AIAA J, TN) 1739
Optimal payload ascent trajectories of winged vehicles. James A. Martin (JSR, EN) 860
Rocket exhaust flow in tube launchers. James L. Batson and John J. Bertin (JSR, SYN) 739
Viscoelastic fracture of solid propellants in pressurization loading conditions. E. C. Francis, C. H. Carlton, and G. H. Lindsey (JSR) 691

LV/ M Subsystem Design

Base flow analysis for dual-engine booster. Yong S. Hong (JSR, SYN) 209
Rocket exhaust flow in tube launchers. James L. Batson and John J. Bertin (JSR, SYN) 739
Systems analysis of Titan family for orbiting multiple communication satellites. J. M. Edgar (PS, V.32) 405

LV/ M System and Component Ground Testing

Ground testing and simulation—An overview: Part IV: Propulsion testing. Michael Pindzola (A/ A, July-August) 63
On multiple-shaker resonance testing. R. R. Craig Jr. and Y.-W. T. Su (AIAA J) 924
Simulation of a ground facility for testing ramjets under flight conditions. William Mitchell (JSR, SYN) 449

LV/ M Trajectories

Approximate impact dispersion methods for symmetric entry vehicles. T. D. Burton (JSR) 777
High-speed computation of ascent trajectories within iterative loops using collocation methods. Peter R. Hempel (AIAA J, SYN) 1467
Mars surface-to-orbit vehicles for sample return missions. William L. Weaver (JSR, EN) 426
Optimal payload ascent trajectories of winged vehicles. James A. Martin (JSR, EN) 860

Launch Vehicle Systems (Including Ground Support)

Agena primary and integrated secondary propulsion systems. S. C. DeBrock and C. J. Rudey (JSR, SYN) 769
Analysis of deployment and inflation of large ribbon parachutes. D. F. McVey and D. F. Wolf (JA) 96
Mars surface-to-orbit vehicles for sample return missions. William L. Weaver (JSR, EN) 426
Prediction of pressure fluctation in sounding rockets and manifolded recovery systems. John F. Laudadio (JSR, EN) 119
Single-stage shuttles for ground launch and air launch. Robert Salkeld (A/ A, March) 52
Space shuttle/ The new baseline. M. S. Malkin (A/ A, January) 62

Missile Systems

Analysis of compressible turbulent flow over a yawed cone. A. Robin Mowlem and Russell A. Smith (AIAA J, SYN) 1171
Chamber bleed auxiliary power unit. J. A. Murray (JSR) 808
Effect of thrust on the longitudinal oscillations of missiles. E. V. Laitone and Wen-Fan Lin (JSR, EN) 121
Information content subsetting of highly correlated error sources. I. M. Weiss (AIAA J) 1726
On Murphy's stability criterion. J. P. Sharma (JSR, EN) 432

Sounding Rocket Systems

ARIES—A controlled sounding rocket. Robert D. Arritt (A/ A, Dec.) 50
Development of the Astrobee F sounding rocket system. R. B. Jenkins, J. P. Taylor, and H. J. Honecker Jr. (JSR, EN) 56
Dynamics of sounding rockets at burnout. William C. Womack, Charles W. Bert, and Farrell J. Perdreauville (JSR) 716
Effect of thrust on the longitudinal oscillations of missiles. E. V. Laitone and Wen-Fan Lin (JSR, EN) 121
Optimal scan of the sky from a rocket. Russell A. Nidey (AIAA J, TN) 1162
Sounding rocket payload recovery systems. Donald W. Johnson (JSR, EN) 424

Tracking Systems

Aircraft localization with a time-frequency system. Jean Besson and Jean Boillot (JA, SYN) 193
Information content subsetting of highly correlated error sources. I. M. Weiss (AIAA J) 1726

MARINE TECHNOLOGY

Marine Electric Power Systems

Marine Hydrodynamics, Vessel and Control Surface

Analysis of a wave energy conversion buoy. Michael E. McCormick (JH) 77
Analytical prediction of the influence of polymer additives on the shear drag of bodies of revolution. Frederick L. Test (JH, SYN) 45
Correlation of force measurements and separated flow regions on surface piercing struts. P. D. Swales, R. C. McGregor, and A. J. Wright (JH, EN) 72
Coupled pitch and heave porpoising instability in hydrodynamic planing. Peter R. Payne (JH) 58
Dynamic hinge moment of a low aspect ratio control surface. Gerald C. Lauchle (JH, EN) 119
Frequency-dependent wave damping in the time domain. G. M. Connell and A. H. Gray (JH, EN) 167
Perturbation-energy approach for the development of the nonlinear equations of ship motion. Ali H. Nayfeh, Dean T. Mook, and Larry R. Marshall (JH) 130
Separation over a flat plate-wedge configuration at oceanic Reynolds numbers. David R. Campbell (JH, SYN) 3
Subharmonic and superharmonic resonances in the pitch and roll modes of ship motions. Dean T. Mook, Larry R. Marshall, and Ali H. Nayfeh (JH) 32

Marine Materials, Corrosion/ Erosion

Marine Mooring Systems and Cable Mechanics

Comment on "The lift force due to von Karman's vortex wake." Peter R. Payne (JH, TC) 121
——Reply by author to P. R. Payne. D. W. Sallet (JH, TC) 123
Comment on "The lift force due to von Karman's vortex wake." M. Tanner (JH, TC) 124
Dynamic forces exerted by oscillating cables. John P. Breslin (JH) 19

Marine Propulsion System Integration

Marine Vessel Design (Including Loads)

Comment on "Canadian advances in surface-piercing hydrofoils." W. A. Graig (JH, TC) 74
Comment on "Ram wing surface effect boat." Alexander M. Lippisch (JH, TC) 76
Hydrodynamics of large objects in the sea. Part I—Hydrodynamic analysis. C. J. Garrison (JH) 5
Inelastic asymmetric buckling of ring-stiffened cylindrical shells under external pressure. L. H. N. Lee (AIAA J) 1051
Inelastic buckling of a deep spherical shell subject to external pressure. N. C. Huang and G. Funk (AIAA J) 914
Response of air cushion vehicles to random seaways and the inherent distortion in scale models. D. R. Lavis, R. J. Bartholomew, and J. C. Jones (JH) 83
Shaping of axisymmetric bodies for minimum drag in incompressible flow. Jerome S. Parsons, Raymond E. Goodson, and Fabio R. Goldschmied (JH) 100

Marine Vessel Systems, Submerged

Shaping of axisymmetric bodies for minimum drag in incompressible flow. Jerome S. Parson, Raymond E. Goodson, and Fabio R. Goldschmied (JH) 100
Systems identification: Application to underwater vehicle dynamics. B. E. Sandman and J. G. Kelly (JH) 94

Marine Vessel Systems, Surface

Comment on "Canadian advances in surface-piercing hydrofoils." W. A. Graig (JH, TC) 74
Comment on "Ram wing surface effect boat." Alexander M. Lippisch (JH, TC) 76
Dynamic forces exerted by oscillating cables. John P. Breslin (JH) 19
Response of air cushion vehicles to random seaways and the inherent distortion in scale models. D. R. Lavis, R. J. Bartholomew, and J. C. Jones (JH) 83

Marine Vessel Trajectories, Stability, and Control

Coupled pitch and heave porpoising instability in hydrodynamic planing. Peter R. Payne (JH) 58
Dynamic hinge moment of a low aspect ratio control surface. Gerald C. Lauchle (JH, EN) 119
Frequency-dependent wave damping in the time domain. G. M. Connell and A. H. Gray (JH, EN) 167
Generalized quasi-linearization method. D. K. Scharmack and N. R. Sandell Jr. (AIAA J) 1236
Response of air cushion vehicles to random seaways and the inherent distortion in scale models. D. R. Lavis, R. J. Bartholomew, and J. C. Jones (JH) 83
Systems identification: Application to underwater vehicle dynamics. B. E. Sandman and J. G. Kelly (JH) 94

Marine Vessel Vibration

Oceanography, Physical and Biological

Effect of a wavy bottom on Kelvin-Helmholtz instability. A. Mitra and M. D. Greenberg (JH) 53
Mathematical modeling for the detection of fish by an airborne laser. David L. Murphree, Clayborne D. Taylor, and Ronald W. McClendon (AIAA J) 1686

Propulsion System Hydrodynamics

Effect of a wavy bottom on Kelvin-Helmholtz instability. A. Mitra and M. D. Greenberg (JH) 53

Sea Pollution Containment and Control

Undersea Acoustics

Undersea Communication

Undersea Extra-Vehicular Activity

Thermal protection for divers. W. W. McCrory (JH) 115

Undersea Habitability and Life Support Systems

Analytic model for assessing the thermal performance of scuba divers. Leslie D. Montgomery (JH) 108
Apparatus and techniques for safe, economical work in hostile environments. H. Almqvist and B. Jansson (JH) 125

Undersea Medicine (Including Psychology, Pressure Effects, etc.)

Analytic model for assessing the thermal performance of scuba divers. Leslie D. Montgomery (JH) 108
Apparatus and techniques for safe, economical work in hostile environments. H. Almqvist and B. Jansson (JH) 125

PROPULSION

Airbreathing Engine Testing

Advances in measuring techniques for turbine cooling test rigs: Status report. Frank G. Pollack (PS, V.34) 371
Aircraft turbine engine emissions under simulated supersonic flight conditions. R. C. German, C. E. Robinson, M. D. High, and R. F. Lauer (JA) 472
Current state-of-the-art for airbreathing combustor measurements. W. M. Shaffernocker (PS, V.34) 227
Dynamic flow studies by application of pressure and velocity sensors on axial flow fan blades. John T. Carroll (PS, V.34) 115
Engine condition monitor system to detect foreign object damage and crack development. H. R. Hegner (PS, V.34) 531
Gas temperature-density (GTD) sensor for turbine inlet gas temperature measurement. J. Van Roberts and David A. Rohy (PS, V.34) 355
Heat transfer measurements in turbines. J. F. Louis, A. M. Demirjian, and R. F. Topping (PS, V.34) 331
Holography of JP-4 droplets and combusting boron particles. B. J. Matthews, R. F. Wuerker, H. F. Chambers Jr., and J. Hojnacki (PS, V.34) 297
Inflight engine condition monitoring system. G. C. Van Cleve (PS, V.34) 471
In-line oil monitor and its role in engine condition monitoring, The. George F. Skala (PS, V.34) 499
Instrumenting a stoichiometric turbine development engine. Ronald P. Schwedland and Morris F. Hall (PS, V.34) 387
Investigation of the use of holography in studying supersonic flow in inlets. W. C. Spring III and W. C. Ragsdale (PS, V.34) 95
Jet engine soot emission measured at altitude. J. M. Rosen and R. Greegor (JA, EN) 243
Measurement techniques for supersonic combustion testing. R. C. Orth, F. S. Billig, and S. E. Grenleski (PS, V.34) 263
Modularized instrument system for turbojet engine test facilities. W. C. Nieberding and D. R. Englund Jr. (PS, V.34) 205

On-the-shaft data systems for rotating engine components. Daniel J. Lesco, John C. Sturman, and William C. Nieberding (PS, V.34) 131
P3G—A new dynamic distortion generator. P. H. Kutschenreuter Jr., T. P. Collins, and W. F. Vier III (JA) 344
Pyrometer for measurement of surface temperature distribution on a rotating turbine blade. Donald R. Buchele and Daniel J. Lesco (PS, V.34) 347
Response of miniature pressure tranducers to fluctuations in supersonic flow. E. Grande and G. C. Oates (PS, V.34) 3
Sensing incipient engine failure with electrostatic probes. Robert P. Couch, Dennis R. Rossbach, and Ray W. Burgess Jr. (PS, V.34) 515
Study of a flight monitor for jet engine disk cracks using the critical length criterion of fracture mechanics. John P. Barranger (PS, V.34) 325
Systems engineering approach to effective engine condition monitoring. David W. Leiby (PS, V.34) 481
Testing the external burning propulsion concept. H. L. Fein and D. E. Shelor (JSR, EN) 538
Total pressure averaging in pulsating flows. L. N. Krause, T. J. Dudzinski, and R. C. Johnson (PS, V.34) 193
Total pressure recovery for a dump combustor. W. William Beans (JSR, EN) 433
Turbine blade pyrometer system in the control of the Concorde engine. K. R. Curwen (PS, V.34) 399
Turbine inlet gas temperature measurement system using a fluidic temperature sensor. William L. Webb and Paul J. Reukauf (JA) 422
Ultrasonic turbine inlet gas temperature sensor, An. L. L. Small and C. S. Longstreet (PS, V.34) 437

Airbreathing Propulsion, Hypersonic

Evaluation of a wedge gas-sampling probe. H. Lee Beach Jr. (AIAA J, TC) 1284
Instrumentation for in-flight determination of steady-state and dynamic inlet performance in supersonic aircraft. R. H. Smith and F. W. Burcham Jr. (PS, V.34) 41
Measurement techniques for supersonic combustion testing. R. C. Orth, F. S. Billig, and S. E. Grenleski (PS, V.34) 263
Performance of an inlet for an integrated scramjet concept. Carl A. Trexler (JA, EN) 589
Research instrumentation requirements for flight/ wind-tunnel tests of the YF-12 propulsion system and related flight experience. William G. Schweikhard and Earl J. Montoya (PS, V.34) 19
Supersonic combustion of hydrogen injected perpendicular to a ducted vitiated airstream. R. C. Rogers and J. M. Eggers (AIAA J, SYN) 1621

Airbreathing Propulsion, Subsonic and Supersonic

Aeroelastic stability of cylindrical shells subjected to a rotating flow. E. H. Dowell, A. V. Srinivasan, J. D. McLean and J. Ambrose (AIAA J) 1644
Aft-end design techniques for twin-engine fighters. Edsel R. Glasgow and Don M. Santman (JA) 39
AIAA holds fuel-saving session. Jerry Grey (A/ A, May) 52
Airfoil design for high tip speed compressors. G. David Huffman and P. C. Tramm (JA) 682
Automatic detection and suppression of inlet buzz. L. O. Billig (PS, V.34) 453
Combustion R&D—Key to our energy future. Antoni K. Oppenheim and Felix J. Weinberg (A/ A, Nov.) 22
Compressor distortion estimates using parallel compressor theory and stall delay. James A. Korn (JA) 584
Designing small gas turbine engines for low noise and clean exhaust. H. C. Eatock, J. C. Plucinsky, and J. A. Saintsbury (JA) 616
Effect of inlet turbulence on compressor noise. B. Robbins and B. Lakshminarayana (JA) 273
Effect of transducer diameter on resolution of total pressure fluctuation in a turbulent flow. W. G. Steenken (PS, V.34) 167
Engine aids and the metrologist syndrome. H. M. Snowball (PS, V.34) 505
Engine condition monitoring as a part of the propulsion management concept. R. K. Sibley (PS, V.34) 464
Engine sensory requirements for energy management. I. A. Carnegis (PS, V.34) 419
Evaluation of hypermixing for thrust augmenting ejectors. Paul M. Bevilaqua (JA) 348
Experiences in the design and application of turbine blade pyrometers. Herbert Katz (PS, V.34) 409
F-12 series aircraft propulsion system performance and development. David H. Campbell (JA) 670
Flow separation over axisymmetric afterbody models. Walter M. Presz Jr. and Edward T. Pitkin (JA) 677
Holography of JP-4 droplets and combusting boron particles. B. J. Matthews, R. F. Wuerker, H. F. Chambers Jr. and J. Hojnacki (PS, V.34) 297
Ignition and global combustion models for clouds of boron particles. R. A. Meese and J. G. Skifstad (AIAA J) 71
Inlet distortion evaluation from limited high-response instrumentation. Stanley H. Ellis and Barry J. Brownstein (JA) 112
Instrumentation for in-flight determination of steady-state and dynamic inlet performance in supersonic aircraft. R. H. Smith and F. W. Burcham Jr. (PS, V.34) 41
Integrated airframe-nozzle performance for designing twin-engine fighters. E. R. Glasgow (JA) 354
Literature review of turbine combustor modeling and emissions. I. T. Osgerby (AIAA J, SA) 743
Measurement of instantaneous air angle and total temperature fluctuations behind transonic compressor rotors. Bruce V. Johnson, Henry V. Marman, John A. Brent, and Richard M. Hooper (PS, V.34) 179
On the inverse calculation of the mass flow parameter. Joe Der Jr. and John K. Stauffer (JA, EN) 121
Pollution measurements of a swirl-can combustor. Richard W. Niedzwiecki and Robert E. Jones (AIAA J) 844
Possibilities for improved supersonic inlet performance. Norman E. Sorensen and Daniel P. Bencze (JA) 288
Research instrumentation requirements for flight/ wind-tunnel tests of the YF-12 propulsion system and related flight experience. William G. Schweikhard and Earl J. Montoya (PS, V. 34) 19
Simulation of a ground facility for testing ramjets under flight conditions. William Mitchell (JSR, SYN) 449
Study of methods for modeling centerline mass fraction decay in turbulent jets. S. W. Zelazny (AIAA J, TN) 235
System for evaluation of F-15 inlet dynamic distortion. A. P. Farr and G. A. Schumacher (PS, V.34) 59
Testing the external burning propulsion concept. H. L. Fein and D. E. Shelor (JSR, EN) 538
Total pressure recovery for a dump combustor. E. William Beans (JSR, EN) 433
Turbine blade pyrometer system in the control of the Concorde engine. K. R. Curwen (PS, V.34) 399
Turbine inlet gas temperature measurement system using a fluidic temperature sensor. William L. Webb and Paul J. Reukauf (JA) 422
Ultrasonic turbine inlet gas temperature sensor, An. L. L. Small and C. S. Longstreet (PS, V.34) 437
Vibrational nonequilibrium in a high temperature turbojet engine. I. T. Osgerby (JA) 302

Combustion in Gases

Ammonium perchlorate and ammonium perchlorate—Binder sandwich combustion. J. L. Murphy and D. W. Netzer (AIAA J, SYN) 13
Application of Raman effect to flowfield diagnostics. S. Lederman and J. Bornstein (PS, V.34) 283
Blast initiation and propagation of cylindrical detonations in MAPP-air mixtures. R. S. Fry and J. A. Nicholls (AIAA J) 1703
Calculating two-dimensional chemically reacting flows. Carl Scaccia and Lawrence A. Kennedy (AIAA J) 1268
Evaluation of a wedge gas-sampling probe. H. Lee Beach Jr. (AIAA J, TN) 1284
Ignition analysis of adiabatic, homogeneous systems including reactant consumption. C. E. Hermance (AIAA J, ERR) 1008
Jet engine soot emission measured at altitude. J. M. Rosen and R. Greegor (JA, EN) 243
Lightning and the Apollo 17/ Saturn V exhaust plume. E. P. Krider, R. C. Noggle, M. A. Uman, and R. E. Orville (JSR) 72
Linear theory for chemically reacting flows. J. C. Wu and L. Turner III (AIAA J) 468
Measurement techniques for supersonic combustion testing. R. C. Orth, F. S. Billig, and S. E. Grenleski (PS, V.34) 263
Primary zone carbon monoxide levels for gas turbines. Part I—Premixed combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 463
Primary zone carbon monoxide levels for gas turbines. Part II—Liquid fuel combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 465
Supersonic combustion of hydrogen injected perpendicular to a ducted vitiated airstream. R. C. Rogers and J. M. Eggers (AIAA J, SYN) 1621
Testing the external burning propulsion concept. H. L. Fein and D. E. Shelor (JSR, EN) 538
Total pressure recovery for a dump combustor. E. William Beans (JSR, EN) 433
Turbojet exhaust reactions in stratospheric flight. L. B. Anderson, J. W. Meyer, and W. J. McLean (AIAA J) 56

Combustion in Heterogeneous Media

Applications of steady-state spray equations to combustion modeling. Frediano V. Bracco (AIAA J) 1534

Burning constant-stoichiometric ratio relation—Some clarifications. H. S. Mukunda and B. N. Raghunandan (AIAA J, TN) 1429
Direct mixing and combustion efficiency measurements in ducted, particle-laden jets. S. W. Abbott, L. D. Smoot, and K. Schadow (AIAA J) 275
Heterogeneous combustion studies on polystyrene and oxygen styrene copolymer. R. P. Rastogi, K. Kishore, and B. K. Chaturvedi (AIAA J) 1187
Ignition and global combustion models for clouds of boron particles. R. A. Meese and J. G. Skifstad (AIAA J) 71
Ignition of hybrid rocket fuels with fuming nitric acid as oxidant. N. L. Munjal and M. G. Parvatiyar (JSR, EN) 428
Impact of emission regulations on future gas turbine engine combustors. F. J. Verkamp, A. J. Verdouw, and J. G. Tomlinson (JA) 340
Influence of lithium fluoride on the burning rate of AP-polyester propellant. R. K. Dhameja, Y. P. Saradhy, and V. K. Jain (AIAA J, TN) 874
Kinetic factors in heterogeneous combustion of cross-linked polymers. S. K. Baijal and A. N. Sriramulu (AIAA J, TN) 1413
Microwave Doppler shift technique for determining solid propellant transient regression rates. Leon D. Strand, August L. Schultz, and Gary K. Reedy (JSR) 75
Novel high area ratio T-burner for characterizing metallized propellants. C. M. Mihlfeith and L. H. Sayer (JSR) 574
On statistical analysis of composite solid propellant combustion. Robert L. Glick (AIAA J, TN) 384
Primary zone carbon monoxide levels for gas turbines. Part I—Premixed combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 463
Primary zone carbon monoxide levels for gas turbines. Part II—Liquid fuel combustion. Leonard D. Aceto and Reiner Kollrack (AIAA J) 465
Role of binders in solid propellant combustion. N. S. Cohen, R. W. Fleming, and R. L. Derr (AIAA J) 212
Review of the capatibility of structural materials with oxygen. Alan F. Clark and Jerome G. Hust (AIAA J, SA) 441
Site and mode of action of platonizers in double base propellants. N. Kobota, T. J. Ohlemiller, L. H. Caveny, and M. Summerfield (AIAA J) 1709
Surface reaction model for metal particle combustion. C. K. Law (AIAA J, TN) 1612
Theory of steady-state burning of gas-permeable propellants. K. K. Kuo and M. Summerfield (AIAA J) 49

Combustion Stability, Ignition, and Detonation

Attenuation of instabilities in propulsion system combustors. Harold T. Couch and Leonard S. Cohen (JA) 571
Blast initiation and propagation of cylindrical detonations in MAPP-air mixtures. R. S. Fry and J. A. Nicholls (AIAA J) 1703
Combustion response function measurements by the rotating valve method. R. S. Brown, J. E. Erickson, and W. R. Babcock (AIAA J) 1502
Damping of axial instabilities by small-scale nozzles under cold-flow conditions. B. A. Janardan, B. R. Daniel, and B. T. Zinn (JSR) 812
Detonation propulsion for high pressure environments. Lloyd H. Back and Giulio Varsi (AIAA J) 1123
Feasibility of a fluidized powder demand-mode gas generator. Morton Shorr and Thomas F. Reinhardt (JSR) 29
Ignition analysis of adiabatic, homogeneous systems including reactant consumption. C. E. Hermance (AIAA J, ERR) 1008
Instability of combustion. J. S. Ansari (AIAA J, TN) 561
Microwave Doppler shift technique for determining solid propellant transient regression rates. Leon D. Strand, August L. Schultz, and Gary K. Reedy (JSR) 75
Novel high area ratio T-burner for characterizing metallized propellants. C. M. Mihlfeith and L. H. Sayer (JSR) 574
ONERA and SNPE recent work on solid propellant combustion instability. M. Barrere, L. Nadaud, and J. N. Lhuillier (JSR) 33
Pollution measurements of a swirl-can combustor. Richard W. Niedzwiecki and Robert E. Jones (AIAA J) 844
Prediction of the critical diameter of composite propellants. P. K. Salzman and T. C. Duncan (AIAA J) 985
Stability of partially lined combustors with distributed combustion. M. R. Baer, C. E. Mitchell, and W. R. Espander (AIAA J) 475
T-Burners: Experiments compared with theory. M. D. Horton and R. L. Coates (JSR, EN) 48
Theory of steady-state burning of gas-permeable propellants. K. K. Kuo and M. Summerfield (AIAA J) 49

Electric and Advanced Space Propulsion

Advanced high-thrust colloid sources. M. N. Huberman and S. G. Rosen (JSR) 475
Attitude stability of a flexible solar electric spacecraft: A parametric study. Elbert L. Marsh (JSR) 89
Comet Encke flyby—Asteroid rendezvous mission. Alan L. Friedlander (JSR, EN) 270
Detonation propulsion for high pressure environments. Lloyd H. Back and Giulio Varsi (AIAA J) 1123
Electric propulsion technology status and development plans—European programs. Horst W. Loeb (JSR) 821
Electrolytic capacitor power source design for quasi-steady magnetoplasmadynamic arcs. Marco S. Di Capua and Helmut L. Kurtz (JSR) 554
Exhaust plume structure in a quasi-steady MPD accelerator. Adam P. Bruckner and Robert G. Jahn (AIAA J) 1198
Flight qualified pulsed electric thruster for satellite control. R. J. Vondra and K. I. Thomassen (JSR) 613
Flow rate limitations in the self-field accelerator. Helmut Hugel (AIAA J, SYN) 1461
Ion propulsion flight experience, life tests, and reliability estimates. J. H. Molitor (JSR) 677
Ion thruster ESKA 8 for North-South stationkeeping of synchronous satellites. Guenther F. Au and Siegfried F. J. Baumgarth (JSR) 618
Jet-diagnostics of a self-field acclerator with Langmuir probes. F. Maisenhalder and W. Mayerhofer (AIAA J) 1203
Low current pulsed ablation plasma thruster. L. Liebing and F. Seidel (JSR, SYN) 609
Low thrust propulsion system effects on communication satellites. D. F., Hall and W. C. Lyon (PS, V.33) 279
Manufacture and deflagration of an atomic hydrogen propellant. Gerald Rosen (AIAA J) 1325
Mercury flow meter for ion thruster testing. Paul J. Wilbur (JSR, EN) 728
Performance of a fifteen-centimeter ion thruster with reliable restart capability. Paul J. Wilbur (JSR) 621
Plasma fluctuations in a Kaufman thruster. John S. Serafini and Fred F. Terdan (JSR) 752
Power conditioning and control unit for the French cesium contact ion thruster. A. Costes, C. Landrault, and M. Briot (JSR) 759
Power processing systems for ion thrusters. B. G. Herron, D. R. Garth, R. C. Finke, and H. A. Shumaker (PS, V.33) 261
Pulsed plasma microthruster for synchronous meteorological satellite. William J. Guman and Thomas E. Williams (JSR, EN) 729
RAE/ Culham T4 ten centimeter electron-bombardment Mercury ion thruster. D. G. Fearn, R. Hastings, C. M. Philip, P. J. Harbour, and H. H. H. Watson (JSR) 481
Recent hollow cathode investigations at the Royal Aircraft Establishment. C. M. Philip and D. G. Fearn (AIAA J) 1319
Selected comparisons among propulsion systems for communications satellites. Bernard Free and George Huson (PS, V.33) 245
SERT II hollow cathode multiple restarts in space. William R. Kerslake and Robert C. Finke (JSR, EN) 669
Simple spectroscopic technique for the arc region of plasma accelerators. Robert P. Collier and David S. Scott (AIAA J, TN) 103
Survey of auxiliary-propulsion systems for communications satellites. L. B. Holcomb and D. H. Lee (PS, V. 33) 191
9700-hour durability test of a five centimeter diameter ion thruster. S. Nakanishi and R. C. Finke (JSR) 560

Fuels and Propellants, Properties of

Burning constant-stoichiometric ratio relation—Some clarifications. H. S. Mukunda and B. N. Raghunandan (AIAA J, TN) 1429
Combustion of polystyrene and oxygen-styrene copolymer/ ammonium perchlorate propellants. R. P. Rastogi, K. Kishore, and Gurdip Singh (AIAA J, SYN) 9
Feasibility of a fluidized power demand-mode gas generator. Morton Shorr and Thomas F. Reinhardt (JSR) 29
Flow visualization of thermal stratification with localized heat sources. Thomas M. Lovrich, Sidney H. Schwartz, and Leroy A. Holmes (JSR) 664
Heterogeneous combustion studies on polystyrene and oxygen styrene copolymer. R. P. Rastogi, K. Kishore, and B. K. Chaturvedi (AIAA J) 1187
Hyperbolic ignition of rocket propellants with nitric acid containing dissolved nitrogen tetroxide. U. C. Durgapal and V. K. Venugopal (AIAA J, TN) 1611
Ignition of hybrid rocket fuels with fuming nitric acid as oxidant. N. L. Munjal and M. G. Parvatiyar (JSR, EN) 428
Independent region of acceleration in solid propellant combustion. Takashi Niioka and Tohru Mitani (AIAA J, TN) 1759
Influence of lithium fluoride on the burning rate of AP-polyester propellant. R. K. Dhameja, Y. P. Saradhy, and V. K. Jain (AIAA J, TN) 874
Kinetic factors in heterogeneous combustion of cross-linked polymers. S. K. Baijal and A. N. Sriramulu (AIAA J, TN) 1413
Manufacture and deflagration of an atomic hydrogen propellant. Gerald Rosen (AIAA J) 1325

ONERA and SNPE recent work on solid propellant combustion instability. M. Barrere, L. Nadaud, and J. N. Lhuillier (JSR) 33
Prediction of the critical diameter of composite propellants. P. K. Salzman and T. C. Duncan (AIAA J) 985
Role of binders in solid propellant combustion. N. S. Cohen, R. W. Fleming, and R. L. Derr (AIAA J) 212
Site and mode of action of platonizers in double base propellants. N. Kubota, T. J. Ohlemiller, L. H. Caveny, and M. Summerfield (AIAA J) 1709
Specific heat of X14 propellant. J. Richard Ward (AIAA J, TN) 107
Studies on mixed fuels—Hydrazine and ethyl alcohol system. R. P. Rastogi, H. J. Singh, and K. Kishore (AIAA J, TN) 227
Surface reaction model for metal particle combustion. C. K. Law (AIAA J, TN) 1612
T-Burners: Experiments compared with theory. M. D. Horton and R. L. Coates (JSR, EN) 48

Liquid Rocket Engines

Agena primary and integrated secondary propulsion systems. S. C. Derock and C. J. Rudey (JSR) 769
Analytical model for liquid rocket propellant feedline dynamics. Jesse L. Holster and William J. Astleford (JSR) 180
Applications of steady-state spray equations to combustion modeling. Frediano V. Bracco (AIAA J) 1534
Design of maximum thrust nozzles for nonequilibrium chemically reacting flow. Allan A. Taylor and Joe D. Hoffman (AIAA J, SYN) 1299
Holography of JP-4 droplets and combusting boron particles. B. J. Matthews, R. F. Wuerker, H. F. Chambers Jr., and J. Hojnacki (PS, V.34) 297
Holography of nozzles, jets, and spraying systems. J. D. Trolinger, R. A. Belz, and J. E. O'Hare (PS, V.34) 249
Hydrazine attitude-control propulsion: Evolution of a standardization program. James H. Kelley A/ A, June) 34
Hypergolic ignition of rocket propellants with nitric acid containing dissolved nitrogen tetroxide. U. C. Durgapal and V. K. Venugopal (AIAA J, TN) 1611
Ignition of hybrid rocket fuels with fuming nitric acid as oxidant. N. L. Munjal and M. G. Parvatiyar (JSR, EN) 428
Minuteman III liquid propulsion system storage surveillance program. Leonard Usiak and Philip Ramsden (JSR, EN) 792
Performance prediction model for a high-impulse monopropellant propulsion system. H. C. Hearn and D. L. Young (JSR) 764
Propulsion systems for single-stage shuttles. Rudi Beichel (A/ A, Nov.) 32
Space shuttle bipropellant RCS engine. M. L. Chazen and W. Sanscrainte (JSR) 685
Survey of auxiliary-propulsion systems for communications satellites. L. B. Holcomb and D. H. Lee (PS, V. 33) 191
Thrust measuring system for electrothermal thrusters. B. C. Barber (JSR) 549

Marine Propulsion

Nuclear Propulsion

Feasibility of rotating fluidized bed reactor for rocket propulsion. Hans Ludewig, A. James Manning, and Chad J. Raseman (JSR) 65

Rocket Engine Testing

Rocket plume testing in ground test facilities. R. J. Schulz and R. C. Bauer (JSR) 16
Space shuttle bipropellant RCS engine. M. L. Chazen and W. Sanscrainte (JSR) 685
Thrust measuring system for electrothermal thrusters. B. C. Barber (JSR) 549

Solid and Hybrid Rocket Engines

Ammonium perchlorate and ammonium perchlorate—Binder sandwich combustion. J. L. Murphy and D. W. Netzer (AIAA J, SYN) 13
Approximate distribution of particle mass flux in a high altitude solid propellant rocket plume, An. Blaine E. Pearce (AIAA J, TN) 718
Combustion of polystyrene and oxygen-styrene copolymer/ ammonium perchlorate propellants. R. P. Rastogi, K. Kishore, and Gurdip Singh (AIAA J, SYN) 9
Damping of axial instabilities by small-scale nozzles under cold-flow conditions. B. A. Janardan, B. R. Daniel, and B. T. Zinn (JSR) 812
Development of the Astrobee F sounding rocket system. R. B. Jenkins, J. P. Taylor, and H. J. Honecker Jr. (JSR, EN) 56
Emission spectra from a stream of cooling particles. W. S. Rothwell and H. L. Schick (JSR, EN) 597
Extendible exit cone development for the C4 third-stage motor. Lee Carey and Russell Ellis (JSR) 624
Flowfield in the combustion chamber of a solid propellant rocket motor. R. Dunlap, P. G. Willoughby and R. W. Hermsen (AIAA J, TN) 1440
Gas dynamic gain of supersonic thrust nozzles. Joe D. Hoffman and A. R. Maykut (JSR) 697
Heterogeneous combustion studies on polystyrene and oxygen styrene copolymer. R. P. Rastogi, K. Kishore, and B. K. Chaturvedi (AIAA J) 1187
Maximum thrust nozzles for gas particle flows. Arnold A. Elsbernd and Joe D. Hoffman (AIAA J) 283
ONERA and SNPE recent work on solid propellant combustion instability. M. Barrere, L. Nadaud, and J. N. Lhuillier (JSR) 33
On statistical analysis of composite solid propellant combustion. Robert L. Glick (AIAA J, TN) 384
Regression rate stuides of aniline formaldehyde—Red fuming nitric acid hybrid system. U. C. Durgapal and A. K. Chakrabarti (JSR, EN) 447
Surface reaction model for metal particle combustion. C. K. Law (AIAA J, TN) 1612

SPACECRAFT TECHNOLOGY

Data Sensing and Presentation or Transmission Systems

An 11-13 GHz satellite communications repeater. Bruno Blachier, Philippe Feve, and Walter A. Koenig (PS, V.32) 123
Analysis and test of a precision pulse-rebalance gyroscope. R. N. Clark and D. C. Fosth (JSR) 264
Interactive-TV networking: A modest proposal for using domestic communications satellites. Rodman Davis (A/ A, April) 62
NASA program to characterize propagation and interference for space applications, A. Jerome Eckerman (PS, V.32) 327
Near-isotropic microwave antenna for communications satellites. W. S. Gregorwich and C. W. Westerman (PS, V.33) 533
Synchronization of Earth stations to satellite-switched sequences. R. A. Rapuano and N. Shimasaki (PS, V.33) 411

Earth-Orbital Trajectories

Comparison of statistical orbit determination methods. B. E. Schutz, J. D. McMillan, and B. D. Tapley (AIAA J, SYN) 1465
Computer illustrations of Earth satellites orbits. Donald L. Hitzl (JSR, EN) 346
Mission planning aspects of Skylab Earth resources experiments. David D. DeAtkine (JSR, EN) 266
Orbit analysis for coastal zone oceanography observations. Edwin F. Harrison and Richard N. Green (JSR, SYN) 131
Nonlinear programing by projection-restoration applied to optimal geostationary satellite positioning. W. A. Gruver and N. H. Engerbach (AIAA J) 1715
Satellite motion about an oblate Earth. J. J. F. Liu (AIAA J) 1511
Time requirements for multiple intersatellite transfers. E. H. Fallin III (JSR, EN) 445
Variation in range, range-rate, propagation time delay, and Doppler shift for a nearly geostationary satellite. Victor J. Slabinski (PS, V.33) 3
Vinti solution for free-flight rocket trajectories. Donald van Z. Wadsworth (AIAA J, TC) 1296

Earth Satellite Systems, Unmanned

Attitude dynamics of an orbiting electromagnet. Victor D. Cohen and Paul H. Savet (JSR, EN) 252
Characteristics and applications of multibeam spacecraft antennas. K. G. Schroeder (PS, V. 33) 503
Communications satellites: The second decade. Gilbert E. LaVean and Edward J. Martin (A/ A, April) 54
Computer illustrations of Earth satellite orbits. Donald L. Hitzl (JSR, EN) 346
Decade of improvements to orbiting solar observatories. W. H. Follett, L. T. Ostwald, J. O. Simpson, and T. M. Spencer (JSR) 327
Design for INSAT, A. P. P. Kale, R. L. Nickelson, and F. W. Sarles Jr. PS, V.32) 173
Design of the INTELSAT IV transponder. S. B. Bennett and I. Dostis (PS, V.33) 373
DOD's Space Test Program. Frank A. Paparozzi and Neal T. Anderson (A/ A, June) 42
Dynamics and configuration control of two-body satellite systems. Willem Stuiver (JSR, SYN) 545
Earth segment in the symphonie project, The. F. Hiergeist, J. L. De Montlivault, and G. Payet (PS, V.32) 231
European communication satellite program, The. Rene C. Collette (PS, V.32) 213

Feasibility of large-sclae orbital solar/ thermal power generation. John T. Patha and Gordon R. Woodcock JSR) 409
High-power communications technology satellite for the 12- and 14-GHz bands. C. A. Franklin and E. H. Davison (PS, V.32) 87
Holographic structural control for large space reflectors and radio telescopes. T. A. Heppenheimer (JSR, EN) 536
Lessons learned from INTELSAT III satellite program. C. O. Meredith (PS, V.32) 3
Low thrust propulsion system effects on communication satellites. D. F. Hall and W. C. Lyon (PS, V.33) 279
Multiple beam communication satellites with remote beam steering and beam shaping. P. F. Sielman, L. Schwartz, and T. T. Noji (PS, V.32) 265
Optimal scheduling of a satellite control network using zero-one linear programing. L. C. Westphal (JSR, EN) 731
Orbit analysis for coastal zone oceanography observations. Edwin F. Harrison and Richard N. Green (JSR, SYN) 131
Orbiting astronomical observatory heat pipe flight performance data. W. Harwell, F. Edelstein, R. McIntosh, and S. Ollendorf (PS, V.35) 445
Propulsion requirements for communications satellites. William C. Isley and Kenneth I. Duck (PS, V.33) 165
Quantifying parameters influencing the spacing of geostationary satellites. V. F. Henry, J. E. Whitworth, and E. A. Neham (PS, V.32) 309
Reduced state estimator for orbital heading reference, A. M. G. Lyons and D. B. DeBra (JSR) 97
Satellite freed of all but gravitational forces: "TRIAD I," A. Staff of the Space Department and Staff of the Guidance and Control Laboratory (JSR) 637
Simulation and testing of a double-gimballed momentum wheel stabilization system for communication satellites. K. L. Lebsock, H. R. Flanders, and J. J. Rodden (JSR) 395
Spaceborne very-long-baseline radio astronomy interferometry. T. A. Heppenheimer (JSR, EN) 268
Synchronization of Earth stations to satellite-switched sequences. R. A. Rapuano and N. Shimasaki (PS, V.33) 411
Systems analysis of Titan family for orbiting multiple communication satellites. J. M. Edgar (PS, V.32) 405
Thermal control of the large space telescope. Richard D. Cummings (PS, V.35) 489
United Kingdom program of communication satellites, The. N. Simmons (PS, V.32) 293
Widening ERTS applications. Enrico P. Mercanti (A/ A, May) 28

Entry Deceleration Systems and Flight Mechanics (e.g., Parachutes)

Aerodynamic inflation of shell type, parachute structures. B. W. Roberts (JA) 390
Analysis of deployment and inflation of large ribbon parachutes. D. F. McVey and D. F. Wolf (JA) 96
Axisymmetric, self-excited oscillations in parachutes. Bryan W. Roberts (JA) 736
Development of the Viking parachute configuration by wind-tunnel investigation. Sy Steinberg, Paul M. Siemers III, and Robert G. Slayman (JSR) 101
Parachute mortar design. James E. Pleasants (JSR) 246
Qualification flight tests of the Viking decelerator system. R. D. Moog, R. J. Bendura, J. D. Timmons, and R. A. Lau (JSR) 188
Simplified dynamic model of parachute inflation, A. Dean Wolf (JA) 28
Sounding rocket payload recovery systems. Donald W. Johnson (JSR, EN) 424
Suspension-line wave motion during the lines-first parachute unfurling process. Lamont R. Poole and John L. Whitesides (AIAA J) 38
Wind-tunnel study of spinning conical disk decelerators at Mach 4, A. Antoni K. Jakubowski (JSR) 141

Entry Vehicle Dynamics and Control

Aerodynamic and flight dynamic analysis of finned re-entry vehicles. John K. Kryvoruka and William T. Ashurst (JSR) 135
Approximate impact dispersion methods for symmetric entry vehicles. T. D. Burton (JSR) 777
Blowing simulation of asymmetric transition effects on slender ablating vehicles. Lars E. Ericsson (JSR, EN) 58
Combined effects of nose bluntness and cone angle on unsteady aerodynamics. L. E. Ericsson, R. A. Guenther, W. R. Stake, and G. S. Olmsted (AIAA J, TN) 729
Comment on "Comparison of linear and Riccati equations used to solve optimal control problems." E. D. Denman and Paul Nelson Jr. (AIAA J, TC) 575
Concerning lateral dynamics of flight on a great circle. John E. Cochran Jr. (AIAA J, TN) 557
Determination of allowable tolerances for asymmetries of a free rolling missile. Albert Kirszenblat (JSR) 295
Effect of transverse products of inertia on re-entry vehicle trim angle behavior. Albert E. Hodapp Jr. (JSR, EN) 733
Effects of unsymmetrical stability derivative characteristics on re-entry vehicle trim angle behavior. Albert E. Hodapp Jr. (JSR) 300
Optimal guidance for the space shuttle transition. Robert F. Stengel (JSR) 173
Transition effects on slender vehicle stability and trim characteristics. Lars E. Ericsson (JSR) 3
——Transition effects on slender vehicle stability and trim characteristics. Lars. E. Ericsson (JSR, ERR) 448

Entry Vehicles and Landers

Aerodynamic heat transfer to RSI tile surfaces and gap intersections. James C. Dunavant and David A. Throckmorton (JSR, EN) 437
Heat shielding for Venus entry probes. David L. Peterson and William E. Nicolet (JSR) 382
Moments and forces on general convex bodies in hypersonic flow. Jack Pike (AIAA J) 1241
Simulation of real-gas effects for Mars entry. James L. Hunt, Robert A. Jones, and Raymond E. Midden (JSR, EN) 62
Thermal protection system weight minimization for the space shuttle through trajectory optimization. Frank Garcia Jr. and Wallace T. Fowler (JSR) 241

Entry Vehicle Mission Studies and Flight Mechanics

Atmosphere-entry behavior of a modular, disk-shaped isotope heat source. J. W. Vorreiter, J. J. Burns, W. C. Pitts, and H. A. Stine (JSR) 308
Engineering models of the Venus atmosphere. Richard B. Noll and Michael B. McElroy (JSR) 21
Pioneer Venus mission plan for atmospheric probes and an orbiter. John W. Dyer, Robert R. Nunamaker, John R. Cowley Jr., and Robert W. Jackson (JSR) 710

Entry Vehicle Testing

Planetary entry aerothermodynamics. Part I. Technology requirements and experimental facilities. Walter B. Olstad (A/ A, Nov.) 58
Planetary entry aerothermodynamics: Part II—Computational analyses and flight experience. Walter B. Olstad (A/ A, Dec.) 55
Radial base heat-transfer gradients in turbulent flow. Bruce M. Bulmer (JSR, EN) 798
Simulation of real-gas effects for Mars entry. James L. Hunt, Robert A. Jones, and Raymond E. Midden (JSR, EN) 62

Extraterrestrial Surface Transportation

Propulsion dynamics of lunar hoppers. Ronald J. Meetin and Howard S. Seifert (JSR) 852

Extra-Vehicular Activity

Teleoperator visual system simulations. J. R. Tewell, A. M. Ray, R. P. Meirick, and C. E. Polhemus (JSR) 418
Shuttle extra-vehicular life support equipment. James G. Sutton (JSR, EN) 442

Lunar and Interplanetary Spacecraft Systems, Manned

Lunar and Interplanetary Spacecraft Systems, Unmanned

Exotic astrophysics. Herbert Friedman (A/ A, April) 20
Exploring Jupiter and it satellites with an orbiter. J. C. Beckman, J. R. Hyde, and S. I. Rasool (A/ A, Sept.) 24
Following the trail blazed by Helios. Harry O. Ruppe (A/ A, July-August) 53
Helios/ the sungrazer. Harry O. Ruppe (A/ A, June) 62
Jupiter's magnetosphere as observed with Pioneer 10. James A. Van Allen and Roger F.Randall (A/ A, July-August) 14
Mariner Venus/ Mercury '73: A strategy of cost control. John R. Biggs and Walter J. Downhower (A/ A, June) 48
Orbit trim strategies for the 1975 Mars Viking mission. Gerald R. Hintz (JSR) 783
Proposal: For an International Solar System Decade. William H. Pickering (A/ A, Sept.) 22
Space systems summaries: Ranger. (A/ A, April) 77
Space systems summaries: Surveyor program. Soft-landing lunar spacecraft. (A/ A, Oct.) 67
Temperature control of the mariner-class spacecraft: A seven-mission summary. L. N. Dumas (PS, V.35) 531

Thermal design of a Saturn/ Uranus atmospheric entry probe. Clifford M. Webb (PS, V.35) 499
Unmanned surface traverses of Mars and Moon: Science objectives, payloads, operations. Leonard D. Jaffe and Raoul Choate (JSR, SYN) 353

Lunar and Interplanetary Trajectories

Comet Encke flyby—Asteroid rendezvous mission. Alan L. Friedlander (JSR, EN) 270
Comparison of advanced propulsion capabilities for future planetary missions. John C. Niehoff and Alan L. Friedlander (JSR) 566
Equations of motion for the perturbed restricted three-body problem. T. A. Heppenheimer (AIAA J, TN) 1442
Exploring Jupiter and it satellites with an orbiter. J. C. Beckman, J. R. Hyde, and S. I. Rasool (A/ A, Sept.) 24
Following the trail blazed by Helios. Harry O. Ruppe (A/ A, July-August) 53
Minimum impulse three-body trajectories. Louis A. D'Amario and Theodore N. Edelbaum (AIAA J) 455
Mission strategy for combined comet-aseroid flybys. David R. Brooks (JSR, EN) 115
Transformation for the numerical integration of systems of the form $X(t) = \mathcal{F}[X(t)]$. G. J. Lastman (AIAA J) 1430
Venus orbital radar mapping in the 1980s—Mission design and analysis. Scott K. Asnin (JSR, SYN) 801

Meteoroid Protection Systems

Radiation Protection Systems

Jupiter's magnetosphere as observed with Pioneer 10. James A. Van Allen and Roger F. Randall (A/ A, July-August) 14
Outgas dominated pressure distribution in a multilayer insulation system. J. T. Lin (AIAA J, TN) 1590
Solar proton fluences for 1977-1983 space missions. Joseph H. King (JSR) 401

Spacecraft Attitude Dynamics and Control

Active attitude and orbit control of body-oriented geostationary communications satellites. Marshall H. Kaplan (PS, V.33) 29
Analysis and test of a precision pulse-rebalance gyroscope. R. N. Clark and D. C. Fosth (JSR, EN) 264
Analytical solution for extensible tethers. J. B. Eades Jr. (JSR, EN) 254
Attitude control of solar electric spacecraft by thruster gimballing. Elbert L. Marsh (JSR, SYN) 737
Attitude determination for the SKYNET and NATO synchronous communications satellites. Charles W. Hanson and John V. Brown (PS, V.33) 127
Attitude dynamics of an orbiting electromagnet. Victor D. Cohen and Paul H. Savet (JSR, EN) 252
Attitude dynamics of satellites with flexible appendages—A brief review. V. J. Modi (JSR, SA) 743
Attitude stability of a flexible solar electric spacecraft: A parametric study. Elbert L. Marsh (JSR) 89
Attitude stability of multibody symmetrical satellites with mechanical dampers. D. A. Johnson (JSR) 645
Automatic control of the Skylab Astronaut Maneuvering Research Vehicle. T. B. Murtagh, C. E. Whitsett, M. A. Goodwin, and J. E. Greenlee (JSR) 321
Automatic spacecraft detumbling by internal mass motion. Terry L. Edwards and Marshall H. Kaplan (AIAA J) 496
Boom forces in librating dumbbell-type satellites. Subhash Chander Sharma and Willem Stuiver (AIAA J, SYN) 425
Bounds on the extension of antennas for stable spinning satellites. L. Meirovitch (JSR, EN) 202
Circularly constrained particle motion in spinning and coning bodies. D. L. Mingori and J. A. Harrison (AIAA J) 1553
Comments on "Analytical design of optimal nutation dampers." Phung K. Nguyen (JSR, TC) 606
——Reply by author to P. K. Nguyen. J. C. Amieux (JSR, TC) 607
Coupled librational motions of a gyrostat satellite. Frank C. Liu (JSR) 230
Decade of improvements to orbiting solar observatories. W. H. Follett, L. T. Ostwald, J. O. Simpson, and T. M. Spencer (JSR) 327
Design and ground test of a pendulum-type active nutation damper. Jean Claude Amieux and Alain Liegeois (JSR, EN) 790
Design of a digital controller for spinning flexible spacecraft. B. C. Kuo, S. M. Seltzer, G. Singh, and R. A. Yackel (JSR) 584
Dynamic trap states of dual-spin spacecraft. M. P. Scher and R. L. Farrenkopf (AIAA J) 1721
Dynamics of a spin-stabilized satellite having flexible appendages. Kazuo Tsuchiya and Haruo Saito (AIAA J) 490
Effect of an autotracking antenna on the nutational stability of a dual-spin spacecraft. J. E. McIntyre and M. J. Gianelli (PS, V.33) 85
Effect of perturbed orbital motion on a spinning symmetrical satellite. Ralph Pringle Jr. (JSR) 451
Effects of asymmetries in the rotor and flexible joint of a dual-spin spacecraft. B. N. Agrawal (JSR, SYN) 611
Energy-sink analysis for asymmetric dual-spin spacecraft. T. M. Spencer (JSR) 463
Fine pointing system for large orbiting telescopes. Werner O. Schiehlen (JSR, SYN) 273
Hydrazine attitude-control propulsion: Evolution of a standardization program. James H. Kelley (A/ A, June) 34
Liapunov stability analysis of hybrid dynamical systems in the neighborhood of nontrivial equilibrium. Leonard Meirovitch (AIAA J) 889
Low order observer for a linear functional of the state vector. Peter Murdoch (AIAA J, TN) 1288
Magnetic-solar hybrid attitude control of satellites in near-equatorial orbits. V. J. Modi and K. C. Pande (JSR) 845
Momentum wheel three-axis attitude control for synchronous communication satellites. J. E. Keigler, W. J. Lindorfer, and L. Muhlfelder (PS, V.33) 141
Movable-mass attitude stabllization system for cable-connected artificial-g space stations, A. Dara W. Childs and Therman L. Hardison (JSR) 165
New method of solution of the eigenvalue problem for gyroscopic systems, A. Leonard Meirovitch (AIAA J) 1337
Next generation communications satellites. J. J. Knopow (PS, V.32) 63
On the stability of equilbrium sets of discrete conservative mechanical systems. Peter Hagedorn (AIAA J) 1057
Optimal scan of the sky from a rocket. Russell A. Nidey (AIAA J, TN) 1162
Partially filled viscous ring nutation damper. Kyle T. Alfriend (JSR) 456
Periodic boom forces in dumbbell-type satellites moving in a circular orbit. Iftikhar Saeed and Willem Stuiver (AIAA J, SYN) 423
Periodic solutions of gravity oriented axisymmetric systems. V. J. Modi and K. Kumar (AIAA J, TN) 225
Pitch axis stabilization in eccentric orbits using a variable-speed rotor. R. E. Lohfeld, D. K. Anand, and J. M. Whisnant (JSR, EN) 430
Precision CMG control for high-accuracy pointing. Sam P. Liden (JSR) 236
Pulsed plasma microthruster for synchronous meteorological satellite. William J. Guman and Thomas E. Williams (JSR, EN) 729
Quantifying parameters influencing the spacing of geostationary satellites. V. F. Henry, J. E. Whitworth, and E. A. Neham (PS, V.32) 309
Reduced state estimator for orbital heading reference, A. M. G. Lyons and D. B. DeBra (JSR) 97
Rigid body mode pointing accuracy and stability criteria for an orbiting spacecraft. G. S. Sandhu (JSR, EN) 599
Simulation and testing of a double-gimballed momentum wheel stabilization system for communication satellites. K. L. Lebsock, H. R. Flanders, J. J. Rodden (JSR) 395
Simulation capability for dynamics of two-body flexible satellites. Fred Austin and George Zetkov (JSR, SYN) 129
Spin stability of torque-free systems containing rotors. T. R. Kane (AIAA J, TN) 720
Stability analysis of interconnected deformable bodies in a topological tree. P. Boland, J.-C. Samin, and P. Y. Willems (AIAA J) 1025
Stability of a dual-spin satellite with two dampers. Kyle T. Alfriend and Carl H. Hubert (JSR) 469
Stability of a spinning satellite with flexible antennas. W. N. Dong and A. L. Schlack Jr. (AIAA J, TN) 1737
Suboptimal controller for a linearized n-body spacecraft. Victor Larson (JSR, EN) 858
Time-optimal pitch control of satellite using solar radiation pressure. K. C. Pande, M. S. Davies, and V. J. Modi (JSR, EN) 601
Torque development on a spherical body due to spin up of the concentric spherical container. Ram Sinha (AIAA J, TN) 404
Thrust measuring system for electrothermal thrusters. B. C. Barber (JSR) 549
Transfer function synthesis by state vector feedback. Peter Murdock (AIAA J, TN) 1765
Wobble correction for a dual-spin vehicle. W. H. Wright (JSR, EN) 255

Spacecraft Communications Systems

DOD's Space Test Program. Frank A. Paparozzi and Neal T. Anderson (A/ A, June) 42
An 11-13 GHz satellite communications repeater. Bruno Blachier, Philippe Feve, and Walter A. Koenig (PS, V.32) 123

Anticipated developments in communications satellite technology. D. C. MacLellan (PS, V.32) 145
Communication satellites: The second decade. Gilbert E. LaVean and Edward J. Martin (A/ A, April) 54
Design for INSAT. A. P. P. Kale, R. L. Nickelson, and F. W. Sarles Jr. (PS, V.32) 173
Design of the INTELSAT IV transponder. S. B. Bennett and I. Dostis (PS, V. 33) 373
Earth segment in the symphonie project, The. F. Hiergeist, J. L. De Montlivault, and G. Payet (PS, V.32) 231
Effect of an autotracking antenna on the nutational stability of a dual-spin spacecraft. J. E. McIntyre and M. J. Gianelli (PS, V.33) 85
European communication satellite progam. Rene C. Collette (PS, V.32) 213
Heat-pipe system for space shuttle traveling wave tube amplifier. A. Basiulis, C. M. Eallonardo, and B. M. Kendall (PS, V.35) 431
Implications of satellite technology for television broadcasting in Canada. B. C. Blevis and M. L. Card (PS, V.32) 281
INTELSAT V system concepts and technology. E. Podraczky and J. D. Kiesling (PS, V.32) 31
Lessons learned from INTELSAT III satellite program. C. O. Meredith (PS, V.32) 3
Manned Earth orbital laboratories to perform communications/ navigation research. Donald M. Waltz and Charles W. Quantock (PS, V. 32) 363
Multiple beam communication satellites with remote beam steering and beam shaping. P. F. Sielman, L. Schwartz, and T. T. Noji (PS, V.32) 265
NASA program to characterize propagation and interference for space applications, A. Jerome Eckerman (PS, V.32) 327
Near-isotropic microwave antenna for communications satellites. W. S. Gregorwich and C. W. Westerman (PS, V.33) 533
Next generation communications satellites. J. J. Knopow (PS, V.32) 63
Polarization isolation characteristics of an dual-beam reflector antenna. J. W. Duncan, S. J. Hamada, and W. C. Wong (PS, V.33) 331
Quantifying parameters influencing the spacing of geostationary satellites. V. F. Henry, J. E. Whitworth, and E. A. Neham (PS, V.32) 309
Results of German TDMA experiments. G. Eckhardt, H. Haberle, B. Reidel, and H. Rupp (PS, V.33) 431
Study on satellitte communications for mobiles. Y. Hirata, M. Kyogoku, and E. Isomura (PS, V.32) 249
Synchronization of Earth stations to satellite-switched sequences. R. A. Rapuano and N. Shimasaki (PS, V.33) 411
Time division multiple-access system for INTELSAT. D. J. Withers and A. K. Jefferis (PS, V.33) 393
United Kingdom program of communication satellites, The. N. Simmons (PS, V.32) 293
Variation in range, range-rate, propagation time delay, and Doppler shift for a nearly geostationary satellite. Victor J. Slabinski (PS, V.33) 3

Spacecraft Configurational and Structural Design (Including Loads)

Analysis of thickness tapered booms for space applications. Rajnish Kumar and Shabeer Ahmed (JSR, EN) 125
Anticipated developments in communications satellite technology. D. C. MacLellan (PS, V.32) 145
Design for INSAT, A. P. P. Kale, R. L. Nickelson, and F. W. Sarles Jr. (PS, V.32) 173
Effect of an autotracking antenna on the nutational stability of a dual-spin spacecraft. J. E. McIntyre and M. J. Gianelli (PS, V.33) 85
Holographic structural control for large space reflectors and radio telescopes. T. A. Heppenheimer (JSR) 536
Large elastic deformation of an inflatable membrane of revolution. C. E. S. Ueng and Y. S. Sun (AIAA J) 761
Momentum wheel three-axis attitude control for synchronous communication satellites. J. E. Keigler, W. J. Lindorfer, and L. Muhlfelder (PS, V.33) 141
Prediction of pressure fluctuation in sounding rockets and manifolded recovery systems. John F. Laudadio (JSR, EN) 119
Space systems summaries: Surveyor program. Soft-landing lunar spacecraft. (A/ A, Oct.) 67
Spacecraft standardization through nuclear power. Elmer J. Frey, Bernard Raab, Alfred Schock, and Robert T. Carpenter (JSR, SYN) 741

Spacecraft Electric Power Systems

Atmosphere-entry behavior of a modular, disk-shaped isotope heat source. J. W. Vorreiter, J. J. Burns, W. C. Pitts, and H. A. Stine (JSR) 308
Beginning of mission flight data on the transit RTG. George B. Bradshaw and Frank D. Postula (JSR, SYN) 675
Cost-effective radioisotope thermoelectric generator designs involving Cm-244 and Pu-238 heat sources. Philip E. Eggers and John L. Ridihalgh (JSR) 704
Electrolytic capacitor power source design for quasi-steady magnetoplasmadynamic arcs. Marco S. Di Capua and Helmut L. Kurtz (JSR) 554
NaK-nitrogen liquid metal MHD converter tests at 30 kw. D. J. Cerini (AIAA J) 78
Next generation communications satellites. J. J. Knopow (PS, V.32) 63
Performance testing of a transit generator at JPL. P. Rouklove (JSR, EN) 434
Power processing systems for ion thrusters. B. G. Herron, D. R. Garth, R. C. Finke, and H. A. Shumaker (PS, V.33) 261
Results from tests of a large lightweight solar array unit. K. L. Hanson (PS, V.33) 307
Spacecraft standardization through nuclear power. Elmer J. Frey, Bernard Raab, Alfred Schock, and Robert T. Carpenter (JSR, SYN) 741

Spacecraft Flight Testing

Spacecraft Ground Testing and Simulation (Including Components)

Design considerations for space chamber cryopanels. K. Srinivasan, V. Seshagiri Rao, and M. V. Krishna Murthy (JSR, EN) 862
Optimized video output from a wide angle optical probe. An. J. A. Mays and R. E. Holms (JA, EN) 124
Simulation and testing of a double-gimballed momentum wheel stabilization system for communication satellites. K. L. Lebsock, H. R. Flanders, and J. J. Rodden (JSR) 395

Spacecraft Habitability and Life Support Systems

Assessment of an active thermal control louvre array for spacecraft. J. G. Lewis and A. S. Kenkare (JSR, EN) 342
Shuttle extra-vehicular life support equipment. James G. Sutton (JSR, EN) 442

Spacecraft Mission Studies and Economics

Advanced applications of the space shuttle. James E. Blahnik and Donald R. Davis (JSR, EN) 117
Comet Encke flyby—Asteroid rendezvous mission. Alan L. Friedlander (JSR, EN) 270
Comparison of advanced propulsion capabilities for future planetary missions. John C. Niehoff and Alan L. Friedlander (JSR) 566
DOD's Space Test Program. Frank A. Paparozzi and Neal T. Anderson (A/ A, June) 42
Engineering models of the Venus atmosphere. Richard B. Noll and Michael B. McElroy (JSR) 21
Feasibility of large-scale orbital solar/ thermal power generation. John T. Patha and Gordon R. Woodcock (JSR) 409
INTELSAT V system concepts and technology. E. Podraczky and J. D. Kiesling (PS, V.32) 31
Lower space costs means more space flight. A. O. Tischler (A/ A, June) 22
Mariner Venus/ Mercury '73: A strategy of cost control. John R. Biggs and Walter J. Downhower (A/ A, June) 48
Methodology for reliability-cost-risk analysis of satellite networks. J. S. Greenberg and G. A. Hazelrigg Jr. (JSR) 650
Momentum wheel three-axis attitude control for synchronous communication satellites. J. E. Keigler, W. J. Lindorfer, and L. Muhlfelder (PS, V.33) 141
Options for Mars exploration. E. Brian Pritchard, Edwin F. Harrison, and Jesse W. Moore (A/ A, February) 46
Pioneer Venus mission plan for atmospheric probes and an orbiter. John W. Dyer, Robert R. Nunamaker, John R. Cowley Jr., and Robert W. Jackson (JSR) 710
Single-stage shuttles for ground launch and air launch. Robert Salkeld (A/ A, March) 52
Spacecraft standardization through nuclear power. Elmer J. Frey, Bernard Raab, Alfred Schock, and Robert T. Carpenter (JSR, SYN) 741
Space shuttle/ The new baseline. M. S. Malkin (A/ A, January) 62
Space systems summaries: Pioneer spacecraft (A/ A, February) 79
Time requirements for multiple intersatellite transfers. E. H. Fallin III (JSR, EN) 445
Venus orbital radar mapping in the 1980s—Mission design and analysis. Scott K. Asnin (JSR, SYN) 801

Spacecraft Navigation, Guidance, and Flight-Path Control Systems

Accuracy of orbit determination from ionospherically corrupted tracking data. P. Norris (JSR, EN) 794
Active attitude and orbit control of body-oriented geostationary communications satellites. Marshall H. Kaplan (PS, V.33) 29

Drift compensation and acceleration resolution for a rotating platform IMU. A. C. Liang and D. L. Kleinbub (JSR, SYN) 547
Iterative explicit guidance for low thrust spaceflight. Robert A. Jacobson and William F. Powers (JSR) 494
Mariner IX optical navigation using Mars lit limb. Navin Jerath and Hiroshi Ohtakay (JSR) 505
Optimal guidance for the space shuttle transition. Robert F. Stengel (JSR) 173
Optimal multiple-impulse direct ascent fixed-time rendezvous. Larry R. Gross and John E. Prussing (AIAA J) 885
Orbit determination capability analysis for the Mariner-Jupiter-Saturn 1977 mission. G. A. Ransford, C. E. Hildebrand, and V. J. Ondrasik (JSR) 658
Orbit trim strategies for the 1975 Mars Viking mission. Gerald R. Hintz (JSR) 783
Reduced state estimator for orbital heading reference, A. M. G. Lyons and D. B. DeBra (JSR) 97
Redundant configuration of electric propulsion systems for stationkeeping. D. Rex and B. Kohnecke (JSR) 488
Satellite freed of all but gravitational forces: "TRIAD I," A. Staff of the Space Department and Staff of the Guidance and Control Laboratory (JSR) 637
Spacecraft computers. A. J. Aukstikalnis (A/ A, July-August) 33
Square-root algorithm for evaluating mismodeled process noise. C. L. Thornton and S. G. Finley (JSR) 223
Stochastic optimal control of linear dynamic systems. Jason L. Speyer and Donald E. Gustafson (AIAA J, SA) 1013
Teleoperator visual system simulations. J. R. Tewell, A. M. Ray, R. P. Meirick, and C. E. Polhemus (JSR) 418
Terminal navigation analysis for the 1980 Comet Encke slow flyby mission. Robert A. Jacobson, James P. McDanell, and George C. Rinker (JSR) 590
Viewing Phobes and Deimos for navigating Mariner 9. T. C. Duxbury, G. H. Born, and N. Jerath (JSR) 215

Spacecraft Propulsion Systems Integration

Active attitude and orbit control of body-oriented geostationary communications satellites. Marshall H. Kaplan (PS, V.33) 29
Agena primary and integrated secondary propulsion systems. S. C. DeBrock and C. J. Rudey (JSR) 769
Hydrazine attitude-control propulsion: Evolution of a standardization program. James H. Kelley (A/ A, June) 34
Low thrust propulsion system effects on communication satellites. D. F. Hall and W. C. Lyon (PS, V.33) 279
Performance prediction model for a high-impulse monopropellant propulsion system. H. C. Hearn and D. L. Young (JSR) 764
Power conditioning and control unit for the French cesium contact ion thruster. A. Costes, C. Landrault, and M. Briot (JSR) 759
Power processing systems for ion thrusters. B. G. Herron, D. R. Garth, R. C. Finke, and H. A. Shumaker (PS, V.33) 261
Redundant configuration of electric propulsion systems for stationkeeping. D. Rex and B. Kohnecke (JSR) 488
Survey of auxiliary-propulsion systems for communications satellites. L. B. Holcomb and D. H. Lee (PS, V.33) 191

Spacecraft Sterilization

Explosives and pyrotechnic propellants for use in long-term deep space missions. Carl S. Gorzynski Jr. and J. Norman Maycock (JSR, SYN) 211

Spacecraft Temperature Control Systems

Advanced thermal control flight experiment. J. P. Kirkpatrick and P. J. Brennan (PS, V.35) 409
Analytical modeling of spacecraft with heat pipes and louvers. H. Hwangbo, J. H. Hunter, and W. H. Kelly (PS, V.35) 469
Assessment of an active thermal control louvre array for spacecraft. J. G. Lewis and A. S. Kenkare (JSR, EN) 342
Char formation in ablatives. R. P. Rastogi and Desh Deepak (AIAA J, TN) 114
Correlation of the over-all thermal resistance of metallic O-rings contacting two cylinders. G. E. Schneider and M. M. Yovanovich (JSR, EN) 206
Development of a high capacity cryogenic heat pipe. P. J. Dominguez and R. L. Kosson (PS, V.35) 395
Four space shuttle wind leading edge concepts. G. A. Niblock, J. C. Reeder, and F. Huneidi (JSR) 314
Gas occlusions in arterial heat pipes. E. W. Saaski (PS, V.35) 353
General expression for predicting conduction shape factors. M. Michael Yovanovich (PS, V.35) 265
Liquefaction dynamics of n-octadecane in cylindrical coordinates. R. L. Bain, F. J. Stermole, and J. O. Golden (JSR) 335
Modeling the effect of air and oil upon the thermal resistance of a sphere-flat contact. M. Michael Yovanovich and W. W. Kitscha (PS, V.35) 293
Optical stability of coatings exposed to four years space environment on OSO-III. John P. Millard and B. Douglas Pearson Jr. (PS, V.35) 249
Orbiting astronomical observatory heat pipe flight performance data. W. Harwell, F. Edelstein, R. McIntosh, and S. Ollendorf (PS, V.35) 445
Surface roughness effects on bidirectional reflectance. T. F. Smith and R. G. Hering (PS, V.35) 145
Temperature control of the mariner-class spacecraft: A seven-mission summary. L. N. Dumas (PS, V.35) 531
Thermal conductance of gasket materials for spacecraft joints. L. S. Fletcher and R. G. Miller (PS, V.35) 335
Thermal contact conductance of porous metallic materials in a vacuum environment. R. G. Miller and L. S. Fletcher (PS, V.35) 321
Thermal control of the Apollo 17 lunar traverse gravimeter. W. A. Vachon, D. R. Fairbanks, R. T. Martorana, and D. Nathanson (PS, V.35) 517
Thermal control of the large space telescope. Richard D. Cummings (PS, V.35) 489
Thermal design of a Saturn/ Uranus atmospheric entry probe. Clifford M. Webb (PS, V. 35) 499
Thermal protection system weight minimization for the space shuttle through trajectory optimization. Frank Garcia Jr. and Wallace T. Fowler (JSR) 241

Spacecraft Tracking

Accuracy of orbit determination from ionospherically corrupted tracking data. P. Norris (JSR, EN) 794
Analytical approach to orbit determination in the presence of model errors. Bob E. Schutz (AIAA J) 298
Comparison of statistical orbit determination methods. B. E. Schutz, J. D. McMillan, and B. D. Tapley (AIAA J, SYN) 1465
Measurements of Earth station antennas G/ T ratio by radio stars and satellites. Henry J. Kochevar (PS, V.33) 359
Near-Isotropic microwave antenna for communications satellites. W. S. Gregorwich and C. W. Westerman (PS, V.33) 533
Orbit determination capability analysis for the Mariner-Jupiter-Saturn 1977 mission. G. A. Ransford, C. E. Hildebrand, and V. J. Ondrasik (JSR) 658
Variation in range, range-rate, propagation time delay, and Doppler shift for a nearly geostationary satellite. Victor J. Slabinski (PS, V.33) 3

Space Crew Training

Space Medicine (Including Weightlessness, Radiation Effects, Psychology, etc.)

Space Station Systems, Manned

Acoustical levitation for space processing. Taylor G. Wang, Melvin M. Saffren, and Daniel D. Elleman (A/ A, July-August) 42
Apollo-Soyuz: A substantial engagement. Arnold W. Frutkin (A/ A, Dec.) 24
Automatic spacecraft detumbling by internal mass motion. Terry L. Edwards and Marshall H. Kaplan (AIAA J) 496
Infrared astronomy and the shuttle. Martin Harwit (A/ A, Oct.) 23
Manned Earth orbital laboratories to perform communications/ navigation research. Donald M. Waltz and Charles W. Quantock (PS, V. 32) 363
Mission planning aspects of Skylab Earth resources experiments. David D. DeAtkine (JSR, EN) 266
Movable-mass attitude stabilization system for cable-connected artificial-g space stations, A. Dara W. Childs and Therman L. Hardison (JSR) 165
Skylab II. Seeing the Sun in a different light. William D. Green Jr. (A/ A, February) 36
Space Shuttle/ The new baseline. M. S. Malkin (A/ A, January) 62
Teleoperator visual system simulations. J. R. Tewell, A. M. Ray, R. P. Meirick, and C. E. Polhemus (JSR) 418

STRUCTURAL MECHANICS AND MATERIALS

Aeroelasticity and Hydroelasticity

Aeroelastic stability of cylindrical shells subjected to a rotating flow. E. H. Dowell, A. V. Srinivasan, J. D. McLean, and J. Ambrose (AIAA J) 1644
Aeroelastic stability of periodic systems with application to rotor blade flutter. P. Friedmann and L. J. Silverthorn (AIAA J) 1559
Analysis of helicopter rotor blade stall flutter. Peter Crimi (JA) 407
Automated method for determining the flutter velocity and the matched point, An. Kumar G. Bhatia (JA) 21

Automated procedure for computing flutter eigenvalues, An. Robert N. Desmarais and Robert M. Bennett (JA) 75
Blade torsional tuning to manage large amplitude control loads. R. Gabel and F. Tarzanin Jr. (JA) 460
Calculation of unsteady transonic aerodynamics for oscillating wings with thickness. S. Y. Ruo, E. Carson Yates Jr., and J. G. Theisen (JA) 601
Comment on the equation for aeroelastic divergence of unguided launch vehicles. N. G. Humbad (AIAA J, TN) 1739
Crack in a thin infinite plate of viscoelastic medium. Satyanarayan Mandal (AIAA J, TN) 233
Doublet lattice-source method for calculating unsteady loads on cavitating hydrofoils. James F. Unruh and Robert L. Bass III (JH) 146
Finite element supersonic aerodynamics for oscillating parallel wings. Kari Appa and G. Charles C. Smith (JA, SYN) 433
Flutter of coaxial cylindrical shells in an incompressible axisymmetric flow. Thomas S. David and A. V. Srinivasan (AIAA J) 1631
Flutter of orthotropic panels at arbitrary yaw angles—Experiment and theory. Peter Shyprykevich and James Wayne Sawyer (JA) 15
Gradient optimization of structural weight for specified flutter speed. E. E. Simodynes (JA) 143
Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, EN) 247
——Influence of static aeroelasticity on oblique winged aircraft. Terrence A. Weisshaar (JA, ERR) 784
Lifting-surface theory for an oscillating T-Tail. Koji Isogai (AIAA J) 28
Linearized integral theory of three-dimensional unsteady flow in a shear layer. John E. Yates (AIAA J) 596
Method for determining the effect of added stores on aeroelastic systems. Henry E. Fettis (AIAA J, TN) 1733
Nonlinear instability of a helicopter blade in hovering. Pin Tong (AIAA J) 360
Nonlinear panel response by a Monte Carlo approach. R. Vaicaitis, E. H. Dowell, and C. S. Ventres (AIAA J) 685
Oscillatory supersonic kernel function method for interfering surfaces. Atlee M. Cunningham Jr. (JA) 664
Oscillatory supersonic kernel function method for isolated wings. Atlee M. Cunningham Jr. (JA) 609
Recent contributions to experiments on cylindrical shell panel flutter. W. Horn, G. Barr, L. Carter, and R. Stearman (AIAA J) 1481
Stability and control of hingeless rotor helicopter ground resonance. Maurice I. Young and David J. Bailey (JA) 333
Static aeroelasticity and the flying wing, revisited. Terrence A. Weisshaar and Holt Ashley (JA, EN) 718
Unsteady aerodynamic response of a two-dimensional airfoil at high reduced frequency. G. L. Commerford and F. O. Carta (AIAA J) 43
Vibration and flutter of stringer-stiffened cylindrical shells. S. Parthan and D. J. Johns (JSR) 579
Wind-tunnel investigation of a B-52 model flutter suppression system. L. T. Redd, J. Gilman Jr., D. E. Cooley, and F. D. Sevart (JA) 659

Hypervelocity Impact

Debris shielding during high-speed erosion. W. G. Reinecke (AIAA J, TN) 1592
On the dependence of materials erosion on environmental parameters at supersonic velocities. George F. Schmitt Jr. (JA, ERR) 192

Materials, Properties of

Char formation in ablatives. R. P. Rastogi and Desh Deepak (AIAA J, TN) 114
Comment on "Bone articulations as systems of poroelastic bodies." C. W. McCutchen (AIAA J, TC) 256
Crack growth and failure of aluminum plate under in-plane shear. Alan Fong-Ching Liu (AIAA J) 180
Explosives and pyrotechnic propellants for use in long-term deep space missions. Carl S. Gorzynski Jr. and J. Norman Maycock (JSR, SYN) 211
Fatigue—A test integrated damage m[illegible]ing approach. Darrell Simpkins, Robert L. Neulieb, and Dennis J. G[illegible]a (JA) 563
Fatigue crack delay and arrest due to single peak tensile overloads. E. P. Probst and B. M. Hillberry (AIAA J) 330
High-temperature properties and failure criteria for rocket nozzle materials. A. A. Vicario Jr., W. T. Freeman Jr., and E. D. Casseday (JSR) 631
Hodographic prediction of cyclic creep behavior. A. Berkovits (JA) 10
On the dependence of materials erosion on environmental parameters at supersonic velocities. George F. Schmitt Jr. (JA, ERR) 192
Skylab II. Seeing the Sun in a different light. William D. Green Jr. (A/ A, February) 36
Stiffness of orthotropic materials and laminated fiber-reinforced composites. Robert M. Jones (AIAA J, TN) 112
Viscoelastic fracture of solid propellants inpressurization loading conditions. E. C. Francis, C. H. Carlton, and G. H. Lindsey (JSR) 691
X2048, a high strength, high toughness aluminum alloy for aircraft applications. S. A..Levy, R. E. Zinkham, and G. E. Spangler (JA) 202

Structural Composite Materials (Including Coatings)

Advanced composites. Alan M. Lovelace (JA, von Karman Lecture) 501
Analysis of bonded joints in vehicular structures. Richard M. Barker and Fritz Hatt (AIAA J, ERR) 1168
Analysis of longitudinal thickness-shear stiffness of a monolayer filamentary composite. S. Chang and C. W. Bert (AIAA J) 1358
Apparent tensorial conductivity of layered composites. F. K. Tsou, P. C. Chou, and I. Singh (AIAA J) 1693
Buckling behavior of a composite beam column. Ronald L. Mann and Richard W. Perkins (AIAA J, TN) 872
Buckling of orthotropic sandwich cylinders under axial compression and bending. Charles D. Reese and Charles W. Bert (JA) 207
Calculation of mechanical impedance by finite element hybrid model. S. T. Mau and P. Tong (AIAA J, TN) 249
Comment on "Bone articulations as systems of poroelastic bodies." C. W. McCutchen (AIAA J, TC) 256
Composite material mechanics: Structural mechanics. Charles W. Bert and Philip H. Francis (AIAA J, SA) 1173
Effect of stress on the directions of stiffness extrema. A. A. G. Cooper (AIAA J, TN) 1609
Effective moduli of layered composites. C. H. S. Chen and F. Tabaddor (JSR, EN) 262
Exact and approximate analyses of transient wave propagation in an anisotropic plate. C. T. Sun and R. Y. S. Lai (AIAA J, TN) 1415
Finite twisting and bending of thin orthotropic strip of lenticular section. C. H. S. Chen (AIAA J, TN) 247
High-performance composite material airframe weight and cost estimating relations. Donald F. Adams (JA) 751
High-temperature properties and failure criteria for rocket nozzle materials. A. A. Vicario Jr., W. T. Freeman Jr., and E. D. Casseday (JSR) 631
On the dependence of materials erosion on environmental parameters at supersonic velocities. George F. Schmitt Jr. (JA, ERR) 192
Static fields of curved generally laminated anisotropic plate strips. Joseph Padovan and Bernard Gosset (AIAA J, SYN) 737
Static solution of monoclinic laminated circular plates. J. Padovan (AIAA J, TN) 862
Stiffness of orthotropic materials and laminated fiber-reinforced composites. Robert M. Jones (AIAA J, TN) 112
Stress analysis of anisotropic laminated plates. R. E. Rowlands, T. Liber, I. M. Daniel, and P. G. Rose (AIAA J) 903

Structural Design, Optimal

Advanced beaded and tubular structural panels. Max D. Musgrove, Bruce E. Greene, John L. Shideler, and Herman L. Bohon (JA) 68
Automated method for determining the flutter velocity and the matched point, An. Kumar G. Bhatia (JA) 21
Buckling analysis of orthogonally stiffened waffle cylinders. M. I. Baig and T. Y. Yang (JSR) 832
Buckling of orthotropic sandwich cylinders under axial compression and bending. Charles D. Reese and Charles W. Bert (JA) 207
Constrained structural optimization for aeroelastic requirements. S. Pines and M. Newman (JA) 313
Crack growth and failure of aluminum plate under in-plane shear. Alan Fong-Ching Liu (AIAA J) 180
Derivatives of eigenvalues and eigenvectors for a general matrix. Carl S. Rudisill (AIAA J, TN) 721
Design of missile-aircraft component white noise isolators. Anthony San Miguel (JA) 704
Evaluation of optimization techniques for applications in engineering design. K. A. Afimiwala and R. W. Mayne (JSR, SYN) 673
Flexure of elastically supported axisymmetric shells. S. T. Gulati and M. C. Dokmeci (AIAA J, TN) 1411
Four space shuttle wind leading edge concepts. G. A. Niblock, J. C. Reeder, and F. Huneidi (JSR) 314
Gradient optimization of structural weight for specified flutter speed. E. E. Simodynes (JA) 143
Incremented flutter analysis. R. F. O'Connell (JA) 236
Minimum weight design of finite element structures. Harold Switzky and Ping-Chung Wang (AIAA J) 170
Minimum weight sandwich beam design. S. N. Huang and D. W. Alspaugh (AIAA J, SYN) 1617
Necessary condition for piecewise uniform optimum design under frequency constraint. Alain Cardou (AIAA J, TN) 1415

On a class of fully stressed trusses. Moshe Fuchs and Lewis P. Felton (AIAA J, TN) 1597
On the accuracy of the Taylor approximation for structure resizing. Olaf O. Storaasli and Jaroslaw Sobieszczanski (AIAA J, TN) 231
Optimum design of elastomeric gaskets for combined thermal and vibration performance. L. S. Fletcher and T. E. Shoup (JSR, EN) 344
Optimum vibration isolation system design using linear programming. Peter A. Orlin and Malcolm A. Cutchins (AIAA J) 1517
Parachute mortar design. James E. Pleasants (JSR) 246
Preliminary design of aircraft structures to meet structural integrity requirements. J. C. Ekvall, T. R. Brussat, A. F. Liu, and Matthew Creager (JA) 136
Reanalysis information for eigenvalues derived from a differential equation analysis formulation. W. A. Thornton and D. K. Majumder (AIAA J, TN) 1749
Recent contributions to experiments on cylindrical shell panel flutter. W. Horn, G. Barr, L. Carter, and R. Stearman (AIAA J) 1481
Some approximation concepts for structural synthesis. L. A. Schmit Jr. and B. Farshi (AIAA J) 692
Variations of eigenvalues and eigenfunctions in continuum mechanics. Mehdi Farshad (AIAA J, TN) 560

Structural Dynamic Analysis

Aeroelastic stability of periodic systems with application to rotor blade flutter. P. Friedmann and L. J. Silverthorn (AIAA J) 1559
Applications of Bolotin's method to vibrations of plates. Wilton W. King and Chien-Chang Lin (AIAA J, TN) 399
Asymmetrical bending and vibration of a conical shell finite element. T. Y. Yang and H. W. Kim (AIAA J, SYN) 257
Attitude stability of a flexible solar electric spacecraft: A parametric study. Elbert L. Marsh (JSR) 89
Average structural response to locally stationary random excitation. Peter D. Schmitz and Neil P. McManus (AIAA J, TN) 229
Axisymmetric vibration of circular sandwich plates. Shaukat Mirza and Anand V. Singh (AIAA J, TN) 1418
Boom forces in librating dumbbell-type satellites. Subhash Chander Sharma and Willem Stuiver (AIAA J, SYN) 425
Bounds on the extension of antennas for stable spinning satellites. L. Meirovitch (JSR, EN) 202
Calculation of mechanical impedance by finite element hybrid model. S. T. Mau and P. Tong (AIAA J, TN) 249
Comment on "Bone articulations as systems of poroelastic bodies." C. W. McCutchen (AIAA J, TC) 256
Comparison of calculated static and dynamic collapse pressures for clamped spherical domes. Mark Hartzman (AIAA J, TN) 568
Composite material mechanics: Structural mechanics. Charles W. Bert and Philip H. Francis (AIAA J, SA) 1173
Constrained structural optimization for aeroelastic requirements. S. Pines and M. Newman (JA) 313
Dependence of plate-bending finite element deflections and eigenvalues on Poisson's ratio. R. Narayanaswami (AIAA J, TN) 1420
Derivatives of eigenvalues and eigenvectors for a general matrix. Carl S. Rudisill (AIAA J, TN) 721
Design of missile-aircraft component white noise isolators. Anthony San Miguel (JA) 704
Dynamic buckling of conical shells with imperfections. A. C. Shiau, R. S. Roth, and T. T. Soong (AIAA J) 755
Dynamic stability of axially-stiffened imperfect cylindrical shells under axial step loading. C. Lakshmikantham and Tien-Yu Tsui (AIAA J) 163
Dynamic transformation method for modal synthesis. Edward J. Kuhar and Clyde V. Stahle (AIAA J) 672
Edge restraint effect on vibration of curved panels. L. W. Rehfield, J. Giri, and C. A. Sparrow (AIAA J, TN) 239
Effect of axisymmetric imperfections on the vibrations of cylindrical shells under axial compression. Aviv Rosen and Josef Singer (AIAA J, TN) 995
Elastodynamics of cracked structures using finite elements. Joseph D. Morgan III, Jerry M. Anderson, and Wilton W. King (AIAA J, TN) 1767
Exact and approximate analyses of transient wave propagation in an anisotropic plate. C. T. Sun and R. Y. S. Lai (AIAA J, TN) 1415
Experiment on an impulse loaded elastic ring. M. J. Forrestal and D. K. Overmier (AIAA J, TN) 722
External-store loads using nonplanar lifting surface theory. William R. Chadwick (JA) 181
Flexural vibrations and Timoshenko's beam theory. Bijan Aalami and Bruno Atzori (AIAA J) 679
Flutter of orthotropic panels at arbitrary yaw angles—Experiment and theory. Peter Shyprykevich and James Wayne Sawyer (JA) 15
Generalization of Dunkerley's formula for finding the lowest critical velocity of rotating shafts. Bruno Atzori (JA, EN) 648
Inclusion of transverse shear deformation in finite element displacement formulations. R. Narayanaswami and H. M. Adelman (AIAA J, TN) 1613
Initially stressed Mindlin plates. E. J. Brunelle and S. R. Robertson (AIAA J) 1036
Large amplitude forced vibrations of elastic structures. L. W. Rehfield (AIAA J, TN) 388
Liapunov stability analysis of hybrid dynamical systems in the neighborhood of nontrivial equilibrium. Leonard Meirovitch (AIAA J) 889
Limiting performance of ground transportation vehicles subject to transient loading. Walter D. Pilkey and Bo Ping Wang (AIAA J, SYN) 1011
Minimization method for treating convergence in modal synthesis, A. T. K. Hasselman and Gary C. Hart (AIAA J) 316
Mode shapes and frequencies of clamped-clamped cylindrical shells. Robert L. Goldman (AIAA J, TN) 1755
Necessary condition for piecewise uniform optimum design under frequency constraint. Alain Cardou (AIAA J, TN) 1415
New method of solution of the eigenvalue problem for gyroscopic systems, A. Leonard Meirovitch (AIAA J) 1337
New triangular plate-bending finite element with transverse shear flexibility. R. Narayanaswami (AIAA J, TN) 1761
Nonlinear flexural oscillations of shallow arches. L. W. Rehfield (AIAA J, TN) 91
Nonlinear flexural vibrations of a rotating Myklestad beam. Khyruddin Akbar Ansari (AIAA J, TN) 98
Nonlinear panel response by a Monte Carlo approach. R. Vaicaitis, E. H. Dowell, and C. S. Ventres (AIAA J) 685
Nonlinear transient analysis of shells and solids of revolution by convected elements. Ted Belytschko and B. J. Hsieh (AIAA J) 1031
Nonlinear vibration of orthotropic triangular plates. C. P. Vendhan and B. L. Dhoopar (AIAA J, ERR) 1008
Numerical-perturbation method for the nonlinear analysis of structural vibrations. Ali H. Nayfeh, Dean T. Mook, and Donald W. Lobitz (AIAA J) 1222
On the dynamic buckling of shells of revolution. Pin Tong and J. Adachi (AIAA J, TN) 863
Optimal predictor-corrector method for systems of second-order differential equations. Luigi Morino, John W. Leech, and Emmett A. Witmer (AIAA J) 1343
Orthogonality procedure for forced response of multispan beams. Joseph Padovan (AIAA J, TN) 1599
Oscillatory supersonic kernel function method for interfering surfaces. Atlee M. Cunningham Jr. (JA) 664
Oscillatory supersonic kernel function method for isolated wings. Atlee M. Cunningham Jr. (JA) 609
Periodic boom forces in dumbbell-type satellites moving in a circular orbit. Iftikhar Saeed and Willem Stuiver (AIAA J, SYN) 423
Probability of first passage failure for stationary random vibration. J. B. Roberts (AIAA K) 1636
Rayleigh and Ritz revisited. Alexander H. Flax (AIAA J, TN) 224
Response of a three-layered ring to an axisymmetric impulse. Mathias J. Sagartz (AIAA J, TN) 390
Response of structures to random acoustic excitation——An experimental study. B. Rama Bhat, B. V. A. Rao, and Hans Wagner (JSR, SYN) 213
Shear and moment response of the airplane wing to nonstationary turbulence. Yoshinori Fujimori (AIAA J, SYN) 1459
Skylab experience with Apollo docking/ latching loads. R. A. Heath and W. B. Holland (JSR) 107
Simulation capability for dynamics of two-body flexible satellites. Fred Austin and George Zetkov (JSR, SYN) 129
Spatial correlation method and a time-varying flexible structure. F. Y. M. Wan and C. Lakshmikantham (AIAA J) 700
Stability of a spinning satellite with flexible antennas. W. N. Dong and A. L. Schlack Jr. (AIAA J, TN) 1737
Statistical identification of structures. Jon D. Collins, Gary C. Hart, T. K. Hasselman, and Bruce Kennedy (AIAA J) 185
Stretch time of scribed metal diaphragms. S. K. Chan (AIAA J, TN) 1149
Stress analysis of anisotropic laminated plates. R. E. Rowlands, T. Liber, I. M. Daniel, and P. G. Rose (AIAA J) 903
Study of lifting rotor flapping response peak distribution in atmospheric turbulence, A. G. H. Gaonkar (JA) 104
Suspension-line wave motion during the lines-first parachute unfurling process. Lamont R. Poole and John L. Whitesides (AIAA J) 38
Various aspects of the structural theory of liquids. David A. Hunt (AIAA J) 1548
Vibration analysis of clamped square orthotropic plate. I. B. Elishakoff (AIAA J) 921

Vibration of annular plates with edge-beams. Richard J. Stuart and John F. Carney III (AIAA J, SYN) 5
Vibrations of sandwich plates under uniaxial compression. Y. V. K. Sadasiva Rao and P. K. Sinha (AIAA J, TN) 1282
When is Hamilton's principle an extremum principle? Donald R. Smith and C. V. Smith Jr. (AIAA J) 1573

Structural Stability Analysis

Axisymmetric buckling of elastic-plastic annular plates. A. Needleman (AIAA J, TN) 1594
Asymmetric buckling of toroidal shells under axial tension. S. K. Radhamohan and B. Prasad (AIAA J) 511
Buckling analysis of orthogonally stiffened waffle cylinders. M. I. Baig and T. Y. Yang (JSR) 832
Buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads. Izhak Sheinman Yair Tene (AIAA J) 15
——Comment on "Buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads." Gerald A. Cohen (AIAA J, TC) 1775
——Reply by authors to G. A. Cohen. Izhak Sheinman and Yair Tene (AIAA J, TC) 1775
Buckling of open cylindrical shells with torsionally stiff rectangular edge stiffeners. G. Krishnamoorthy (AIAA J) 1348
Buckling of orthotropic sandwich clyinders under axial compression and bending. Charles D. Reese and Charles W. Bert (JA) 207
Buckling of short cylindrical shells under axial compression. D. Durban and A. Libai (AIAA J) 909
Buckling of thin cylinder under combined external pressure and axial compression. G. Krishnamoorthy (JA) 65
Buckling of polar orthotropic annular plates under uniform internal pressure. G. K. Ramaiah and K. Vijayakumar (AIAA J) 1045
Comment on "Effect of higher order terms in certain nonlinear finite element models." Robert D. Cook (AIAA J, TC) 1290
Comment on "Finite element structural analysis of local instability." W. H. Wittrick (AIAA J, TC) 123
——Reply by author to W. H. Wittrick. J. S. Przemieniecki (AIAA J, TC) 124
——Reply by authors to R. D. Cook. J. T. Oden, H. Akay, and C. P. Johnson (AIAA J, TC) 1290
Comparison of calculated static and dynamic collapse pressures for clamped spherical domes. Mark Hartzman (AIAA J, TN) 568
Composite material mechanics: Structural mechanics. Charles W. Bert and Philip H. Francis (AIAA J, SA) 1173
Dynamic buckling of conical shells with imperfections. A. C. Shiau, R. S. Roth, and T. T. Soong (AIAA J) 755
Dynamic stability of axially-stiffened imperfect cylindrical shells under axial step loading. C. Lakshmikantham and Tien-Yu Tsui (AIAA J) 163
Finite twisting and bending of thin orthotropic strip of lenticular section. C. H. S. Chen (AIAA J, TN) 247
Floating piecewise linear approximation of a nonlinear constitutive equation. David Durban and Menahem Baruch (AIAA J, TN) 868
Inelastic asymmetric buckling of ring-stiffened cylindrical shells under external pressure. L. H. N. Lee (AIAA J) 1051
Inelastic buckling of a deep spherical shell subject to external pressure. N. C. Huang and G. Funk (AIAA J) 914
Initially stressed Mindlin plates. E. J. Brunelle and S. R. Robertson (AIAA J) 1036
Nonlinear thermo-elastic-plastic and creep analysis by the finite-element method. P. Sharifi and D. N. Yates (AIAA J) 1210
On the dynamic buckling of shells of revolution. Pin Tong and J. Adachi (AIAA J, TN) 863
Postbuckling behavior of clamped skew plates. M. S. S. Prabhu and S. Durvasula (AIAA J, TN) 1423
Reanalysis information for eigenvalues derived from a differential equation analysis formulation. W. A. Thornton and D. K. Majumder (AIAA J, TN) 1749
Reinvestigation of buckling of shells of revolution by a refined finite element. G. Venkateswara Rao, S. K. Radhamohan, and I. S. Raju (AIAA J, TN) 100
Shell instability analysis applied to a radome. Terry L. Janssen and Thomas G. Swaney (AIAA J, TN) 714
Stability of two-hinged circular arches with independent loading parameters. Donald A. DaDeppo and Robert Schmidt (AIAA J, TN) 385
Variations of eigenvalues and eigenfunctions in continuum mechanics. Mehdi Farshad (AIAA J, TN) 560

Structural Static Analysis

Advanced beaded and tubular structural panels. Max D. Musgrove, Bruce E. Greene, John L. Shideler, and Herman L. Bohon (JA) 68
Analysis of axisymmetric shells by transfer matrix method. K. Singa-Rao and C. L. Amba-Rao (JSR) 829
Analysis of longitudinal thickness-shear stiffness of a monolayer filamentary composite. S. Chang and C. W. Bert (AIAA J) 1358
Asymmetrical bending and vibration of a conical shell finite element. T. Y. Yang and H. W. Kim (AIAA J, SYN) 257
Buckling behavior of a composite beam column. Ronald L. Mann and Richard W. Perkins (AIAA J, TN) 872
Buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads. Izhak Sheinman and Yair Tene (AIAA J) 15
——Comment on "Buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads." Gerald A. Cohen (AIAA J, TC) 1775
——Reply by authors to G. A. Cohen. Izhak Sheinman and Yair Tene (AIAA J, TC) 1775
Buckling of short cylindrical shells under axial compression. D. Durban and A. Libai (AIAA J) 909
Comment on "Effect of higher order terms in certain nonlinear finite element models." Robert D. Cook (AIAA J, TC) 1290
——Reply by authors to R. D. Cook. J. T. Oden, H. Akay, and C. P. Johnson (AIAA J, TC) 1290
Comparison of calculated static and dynamic collapse pressures for clamped spherical domes. Mark Hartzman (AIAA J, TN) 568
Crack growth and failure of aluminum plate under in-plane shear. Alan Fong-Ching Liu (AIAA J) 180
Dependence of plate-bending finite element deflections and eigenvalues on Poisson's ratio. R. Narayanaswami (AIAA J, TN) 1420
Effect of stress on the directions of stiffness extrema. A. A. G. Cooper (AIAA J, TN) 1609
Effects of transverse normal and shear strains in orthotropic shells. J. A. Zukas (AIAA J, TN) 1753
Finite twisting and bending of thin orthotropic strip of lenticular section. C. H. S. Chen (AIAA J, TN) 247
Floating piecewise linear approximation of a nonlinear constitutive equation. David Durban and Menahem Baruch AIAA J, TN) 868
Flexure of elastically supported axisymmetric shells. S. T. Gulati and M. C. Dokmeci (AIAA J, TN) 1411
Improved approximation of constitutive elasto-plastic stress-strain relationship for finite element analysis. T. R. Hsu and A. W. M. Bertels (AIAA J, TN) 1450
Inclusion of transverse shear deformation in finite element displacement formulations. R. Narayanaswami and H. M. Adelman (AIAA J, TN) 1613
Inelastic asymmetric buckling of ring-stiffened cylindrical shells under external pressure. L. H. N. Lee (AIAA J) 1051
Initially stress Mindlin plates. E. J. Brunelle and S. R. Robertson (AIAA J) 1036
Large elastic deformation of an inflatable membrane of revolution. C. E. S. Ueng and Y. S. Sun (AIAA J) 761
Method of static analysis of shallow shells, A. R. Jones and J. Mazumdar (AIAA J, TN) 1134
Minimum weight design of finite element structures. Harold Switzky and Ping-Chun Wang (AIAA J) 170
New triangular plate-bending finite element with transverse shear flexibility. R. Narayanaswami (AIAA J, TN) 1761
Nonlinear thermo-elastic-plastic and creep analysis by the finite-element method. P. Sharifi and D. N. Yates (AIAA J) 1210
On the accuracy of the Taylor approximation for structure resizing. Olaf O. Storaasli and Jaroslaw Sobieszczanski (AIAA J, TN) 231
Pressure vessel certification based on fracture mechanics technology. Alvin L. Luttrell and H. LeRoy Henderson (JSR) 838
Shell instability analysis applied to a radome. Terry L. Janssen and Thomas G. Swaney (AIAA J, TN) 714
Solution for inplane and bending fields of tapered anisotropic conical shells. Joseph Padovan (AIAA J, TN) 101
Static fields of curved generally laminated anisotropic plate strips. Joseph Padovan and Bernard Gosset (AIAA J, SYN) 737
Static solution of monoclinic laminated circular plates. J. Padovan (AIAA J, TN) 862
Stiffness of orthotropic materials and laminated fiber-reinforced composites. Robert M. Jones (AIAA J, TN) 112
Stress analysis of anisotropic laminated plates. R. E. Rowlands, T. Libgr, I. M. Daniel, and P. G. Rose (AIAA J) 903
Stress diffusion in thick stiffened panels. Grant P. Steven (JA, EN) 779
Viscoelastic fracture of solid propellants in pressurization loading conditions. F. C. Francis, C. H. Carlton, and G. H. Lindsey (JSR) 691

Thermal Stresses

Creep relaxation of nonaxisymmetric thermal stresses in thick walled

cylinders. M. Sabbaghian and M. R. Eslami (AIAA J) 1652
Effects of transverse normal and shear strains in orthotropic shells. J. A. Zukas (AIAA J, TN) 1753
Improved thermal stress determination by finite element methods. I. U. Ojalvo (AIAA J, TN) 1131
Nonlinear creep analysis by assumed stress finite element methods. T. H. H. Pian (AIAA J, TN) 1756
Nonlinear thermo-elastic-plastic and creep analysis by the finite-element method. P. Sharifi and D. N. Yates (AIAA J) 1210
Numerical thermoelastoplastic solution of a thick-walled tube. A. Shih-Chi Chu (AIAA J) 176

THERMOPHYSICS AND THERMOCHEMISTRY

Atomic, Molecular, and Plasma Properties

Effective electrical conductivity and related properties of a nonequilibrium high pressure MHD plasma. G. Brederlow and K. J. Witte (AIAA J) 83
Exhaust plume structure in a quasi-steady MPD accelerator. Adam P. Bruckner and Robert G. Jahn (AIAA J) 1198
Lightning and the Apollo 17/ Saturn V exhaust plume. E. P. Krider, R. C. Noggle, M. A. Uman, and R. E. Orville (JSR) 72
Optical properties of cryodeposits on low scatter mirrors. Samuel B. Thompson, Frederick Arnold, Richard B. Sanderson, and Arlan W. Mantz (PS, V.35) 229
Stability of nonequilibrium MHD plasma in the regime of fully ionized seed. Takashi Nakamura and Wolfgang Riedmuller (AIAA J) 661

Heat Conduction

Advanced thermal control flight experiment. J. P. Kirkpatrick and P. J. Brennan (PS, V.35) 409
Apparent tensorial conductivity of layered composites. F. K. Tsou, P. C. Chou, and I. Singh (AIAA J) 1693
Biot's variational principle for aerodynamic ablation of melting solids. Anant Prasad and H. C. Agrawal (AIAA J, TN) 250
Correlation of the over-all thermal resistance of metallic O-rings contacting two cylinders. G. E. Schneider and M. M. Yovanovich (JSR, EN) 206
Explicit numerical method for solution of heat-transfer problems. John A. Segletes (AIAA J, SYN) 1463
General expression for predicting conduction shape factors. M. Michael Yovanovich (PS*V.35) 265
Generalized Sturm-Liouville procedure for composite domain anisotropic transient conduction problems. Joseph Padovan (AIAA J, TN) 1158
Heat pipe model accounting for variable evaporator and condenser lengths. C. L. Williams and G. T. Colwell (AIAA J) 1261
Heat-pipe system for space shuttle traveling wave tube amplifier. A. Basiulis, C. M. Eallonardo, and B. M. Kendall (PS, V.35) 431
Liquefaction dynamics of n-octadecane in cylindrical coordinates. R. L. Bain, F. J. Stermole, and J. O. Golden (JSR) 335
Modeling the effect of air and oil upon the thermal resistance of a sphere-flat contact. M. Michael Yovanovich and W. W. Kitscha (PS, V.35) 293
Optimum design of elastomeric gaskets for combined thermal and vibration performance. L. S. Fletcher and T. E. Shoup (JSR, EN) 344
Orbiting astronomical observatory heat pipe flight performance data. W. Harwell, F. Edelstein, R. McIntosh, and S. Ollendorf (PS, V.35) 445
Probabilistic approach to the design of heat pipes. C. C. Roberts Jr. and K. T. Feldman Jr. (PS, V.35) 371
Role of radiative transport in the propagation of laser supported combustion waves. J. P. Jackson and P. E. Nielsen (AIAA J) 1498
Temperature extrapolation mechanism for two-dimensional heat flow. Murray Imber (AIAA J) 1089
Thermal analysis for antenna window in a GM nosetip. Jimmie H. Smith (JSR, EN) 198
Thermal conductance of gasket materials for spacecraft joints. L. S. Fletcher and R. G. Miller (PS, V.35) 335
Thermal conductivity measurements of porous materials in several gaseous environments. Edward G. Keshock (JSR) 41
Thermal contact conductance of porous metallic materials in a vacuum environment. R. G. Miller and L. S. Fletcher (PS, V.35) 321
Thermal protection for divers. W. W. McCrory (JH) 115
Unsteady temperature distribution in volume reflectors. Kenneth C. Weston and R. S. Reddy (AIAA J, TN) 716

Liquid and Solid Thermophysical Properties

Apparent tensorial conductivity of layered composites. F. K. Tsou, P. C. Chou, and I. Singh (AIAA J) 1693
Gas occlusions in arterial heat pipes. E. W. Saaski (PS, V.35) 353
High-speed (subsecond) system for accurate thermophysical measurements at high temperatures. Ared Cezairliyan (PS, V.35) 205
Liquefaction dynamics of n-octadecane in cylindrical coordinates. R. L. Bain, F. J. Stermole, and J. O. Golden (JSR) 335
Reflectance from semi-infinite absorbing-scattering medium with diffuse incident radiation. B. F. Armaly and T. T. Lam (PS, V.35) 115
Specific heat of X14 propellant. J. Richard Ward (AIAA J, TN) 107
Thermal conductivity measurements of porous materials in several gaseous environments. Edward G. Keshock (JSR) 41

Material Ablation

Biot's variational principle for aerodynamic ablation of melting solids. Anant Prasad and H. C. Agrawal (AIAA J, TN) 250
Char formation in ablatives. R. P. Rastogi and Desh Deepak (AIAA J, TN) 114
Combustion of carbon particles in a hypersonic turbulent boundary layer. A. T. Wassel and A. F. Mills (JSR) 803
Cross-hatching studies—A critical review. Rudolph J. Swigart (AIAA J, SA) 1301
Foreign gas injection at windwardmost meridans of yawed sharp cones. Andrzej Wortman (AIAA J, SYN) 741
Generalized flow in gaps and slots including the effects of ablation. Larry Cooper and Kurt E. Putz (JSR) 287
Heat shielding for Venus entry probes. David L. Peterson and William E. Nicolet (JSR) 382

Radiation and Radiative Heat Transfer

Advanced thermal control flight experiment. J. P. Kirkpatrick and P. J. Brennan (PS, V.35) 409
Analysis of thermal radiation bidirectionally reflected from roughened brass. D. C. Look (AIAA J) 656
Application of Raman effect to flowfield diagnostics. S. Lederman and J. Bornstein (PS, V.34) 283
Approximate configuration factors for a gray nonisothermal gas-filled conical enclosure. R. B. Bannerot and F. A. Wierum (PS, V.35) 41
Comparison of three techniques for solving the radiative transport equation. J. A. Roux and A. M. Smith (PS, V.35) 3
Correlation of radiative heating calculations for Venus entry. C. T. Edquist (JSR, EN) 440
Diffraction effects encountered in the measurement of bidirectional reflectance from square pyramids. Fred A. Christie and Andre B. DeVriendt (PS, V.35) 167
Effect of boundary conditions on the radiative reflectance of dielectric coatings. J. A. Roux, A. M. Smith, and F. Shabrokhi (PS, V.35) 131
Emission spectra from a stream of cooling particles. W. S. Rothwell and H. L. Schick (JSR, EN) 597
Heat shielding for Venus entry probes. David L. Peterson and William E. Nicolet (JSR) 382
High-speed (subsecond) system for accurate thermophysical measurements at high temperatures. Ared Cezairliyan (PS, V.35) 205
Infrared properties of reusable surface insulations. R. J. Schmitt, R. M. F. Linford, C. F. Dillow, and T. A. Hughes (PS, V.35) 183
Numerical solution of a nonlinear integral equation by the use of step functions: III. Continuous solutions. Kenneth K. Yoshikawa (AIAA J, TN) 1769
Optical stability of coatings exposed to four years space environment on OSO-III. John P. Millard and B. Douglas Pearson Jr. (PS, V.35) 249
Particulate infrared radiation in aluminized solid-fuel rocket plumes. Bruce W. Worster (JSR, EN) 260
Radiation from an array of gray circular fins of trapezoidal profile. N. M. Schnurr and C. A. Cothran (AIAA J) 1476
Radiation-gas dynamic shock layer coupling. Carl D. Engel and Richard C. Farmer (AIAA J, TN) 1144
Radiation heat transfer in multilayer insulation having perforated shields. C. L. Tien and G. R. Cunnington (PS, V. 35) 65
Radiative transport analysis for plane geometry with isotropic scattering and arbitrary temperature. J. A. Roux and A. M. Smith (AIAA J) 1273
Reflectance from semi-infinite absorbing-scattering medium with diffuse incident radiation. B. F. Armaly and T. T. Lam (PS, V.35) 115
Role of radiative transport in the propagation of laser supported combustion waves. J. P. Jackson and P. E. Nielsen (AIAA J) 1498
Simple spectroscopic technique for the arc region of plasma accelerators. Robert P. Collier and David S. Scott (AIAA J, TN) 103
Spherical harmonics approximation for radiative transfer in polluted atmospheres. R. W. Bergstrom Jr. and R. Viskanta (PS, V.35) 23
Surface roughness effects on bidirectional reflectance. T. F. Smith and R. G. Hering (PS, V.35) 145
Unsteady temperature distribution in volume reflectors. Kenneth C. Weston and R. S. Reddy (AIAA J, TN) 716

Thermal Modeling and Experimental Thermal Simulation

Analytical modeling of spacecraft with heat pipes and louvers. H. Hwangbo, J. H. Hunter, and W. H. Kelly (PS, V.35) 469
Calorimeter measurement of heat transfer at hypersonic conditions. Mitchell R. Wool, Andrew J. Murphy, and Roald A. Rindal (JSR) 363
Coolant pressurization and expulsion for transpiration nosetips. Theodore E. Ward and John R. Schuster (JSR) 518
Correlation of the over-all thermal resistance of metallic O-rings contacting two cylinders. G. E. Schneider and M. M. Yovanovich (JSR, EN) 206
Design considerations for space chamber cryopanels. K. Srinivasan, V. Seshagiri Rao, and M. V. Krishna Murthy (JSR, EN) 862
Diffraction effects encountered in the measurement of bidirectional reflectance from square pyramids. Fred A. Christie and Andre B. DeVriendt (PS, V.35) 167
Flow visualization of thermal stratification with localized heat sources. Thomas M. Lovrich, Sidney H. Schwartz, and Leroy A. Holmes (JSR) 664
Gas occlusions in arterial heat pipes. E. W. Saaski (PS, V.35) 353
Gas temperature-density (GTD) sensor for turbine inlet gas temperature measurement. J. Van Roberts and David A. Rohy (PS, V.34) 355
General expression for predicting conduction shape factors. M. Michael Yovanovich (PS, V.35) 265
Heat pipe model accounting for variable evaporator and condenser lengths. C. L. Williams and G. T. Colwell (AIAA J) 1261
Heat transfer measurements in turbines. J. F. Louis, A. M. Demirjian, and R. F. Topping (PS, V.34) 331
Investigation of laminar flow in a porous pipe with variable wall suction. L. S. Galowin, L. S. Fletcher, and M. J. DeSantis (AIAA J) 1585
Laser burnthrough time reduction due to tangential airflow—An interpolation formula. R. L. Johnson and J. D. O'Keefe (AIAA J) 1106
Modeling the effect of air and oil upon the thermal resistance of a sphere-flat contact. M. Michael Yovanovich and W. W. Kitscha (PS, V.35) 293
Particulate infrared radiation in aluminized solid-fuel rocket plumes. Bruce W. Worster (JSR, EN) 260
Probabilistic approach to the design of heat pipes. C. C. Roberts Jr. and K. T. Feldman Jr. (PS, V.35) 371
Temperature control of the mariner-class spacecraft: A seven-mission summary. L. N. Dumas (PS, V.35) 531
Thermal control of the Apollo 17 lunar traverse gravimeter. W. A. Vachon, D. R. Fairbanks, R. T. Martorana, and D. Nathanson (PS, V.35) 517
Thermal control of the large space telescope. Richard D. Cummings (PS, V.35) 489
Thermal coupling measurement method. L. A. Rosenthal and V. J. Menichelli (JSR) 282
Thermal modeling of a plate with coupled heat-transfer modes. Manohar S. Sohal and John R. Howell (PS, V.35) 99
Thermoelectric device application to spacecraft thermal control. John J. Chapter and Gary W. Johnsen (JSR) 159
Unsteady temperature distribution in volume reflectors. Kenneth C. Weston and R. S. Reddy (AIAA J, TN) 716

Thermal Surface Properties

Analysis of thermal radiation bidirectionally reflected from roughened brass. D. C. Look (AIAA J) 656
Comparison of three techniques for solving the radiative transport equation. J. A. Roux and A. M. Smith (PS, V.35) 3
Coolant pressurization and explusion for transpiration nosetips. Theodore E. Ward and John R. Schuster (JSR) 518
Diffraction effects encountered in the measurement of bidirectional reflectance from square pyramids. Fred A. Christie and Andre B. DeVriendt (PS, V.35) 167
Effect of boundary conditions on the radiative reflectance of dielectric coatings. J. A. Roux, A. M. Smith, and F. Shahrokhi (PS, V.35) 131
Infrared properties of reusable surface insulations. R. J. Schmitt, R. M. F. Linford, C. F. Dillow, and T. A. Hughes (PS, V.35) 183
Optical stability of coatings exposed to four years space environment on OSO-III. John P. Millard and B. Douglas Pearson Jr. (PS, V.35) 249
Reflectance from semi-infinite absorbing-scattering medium with diffuse incident radiation. B. F. Armaly and T. T. Lam (PS, V.35) 115
Specific heat of X14 propellant. J. Richard Ward (AIAA J, TN) 107
Surface roughness effects on bidirectional reflectance. T. F. Smith and R. G. Hering (PS, V.35) 145

Thermochemistry and Chemical Kinetics

Combustion R&D—Key to our energy future. Antoni K. Oppenheim and Felix J. Weinberg (A/A, Nov.) 22
Effects of nonequilibrium ablation chemistry on Viking radio blackout. John S. Evans, Charles J. Schexnayder Jr., and William L. Grose (JSR) 84
——Comment on "Effects of nonequilibrium ablation chemistry on Viking radio blackout." D. E. Jensen (JSR, TC) 736
——Reply by authors to D. E. Jensen. John S. Evans, Charles J. Schexnayder Jr., and William L. Grose (JSR, TC) 736
Electrostatic probe measurements of chemical injection effects during a reentry flight test. D. T. Hayes, S. B. Herskovitz, J. F. Lennon, and J. L. Poirier (JSR) 388
Gas temperature-density (GTD) sensor for turbine inlet gas temperature measurement. J. Van Roberts and David A. Rohy (PS, V.34) 355
High-speed (subsecond) system for accurate thermophysical measurements at high temperatures. Ared Cezairliyan (PS, V.35) 205
Hydrogen ionization in the shock layer for entry into the outer planets. John T. Howe (AIAA J, TN) 875
Impact of emission regulations on future gas turbine engine combustors. F. J. Verkamp, A. J. Verdouw, and J. G. Tomlinson (JA) 340
Influence of ablation impurities on blunt body re-entry ionization. C. J. Schexnayder Jr. and J. S. Evans (AIAA J, SYN) 805
Influence of lithium fluoride on the burning rate of AP-polyester propellant. R. K. Dhameja, Y. P. Saradhy, and V. K. Jain (AIAA J, TN) 874
Optical properties of cryodeposits on low scatter mirrors. Samuel B. Thompson, Frederick Arnold, Richard B. Sanderson, and Arlan W. Mantz (PS, V.35) 229
Planetary entry aerothermodynamics. Part I. Technology requirements and experimental facilities. Walter B. Olstad (A/A, Nov.) 58
Planetary entry aerothermodynamics: Part II. Computational analyses and flight experience. Walter B. Olstad (A/A, Dec.) 55
Small signal gain calculations for high-flow CO discharge lasers. Neill S. Smith, H. A. Hassan, and Roy M. McInville (AIAA J, SYN) 1619
Time-temperature simulation in low-pressure ignition of hypergolic liquids. Michel A. Saad and Samuel R. Goldwasser (AIAA J, SYN) 11
Turbojet exhaust reactions in stratospheric flight. L. B. Anderson, J. W. Meyer, and W. J. McLean (AIAA J) 56

AUTHOR INDEX

Aalami, Bijan and Atzori, Bruno Flexural vibrations and Timoshenko's beam theory. (AIAA J) 679

Abbott, S. W., Smoot, L. D., and Schadow, K. Direct mixing and combustion efficiency measurements in ducted, particle-laden jets. (AIAA J) 275

Abelhamid, A. N., Harrje, D. T., Plett, E. G., and Summerfield, M. Noise characteristics of combustion augmented jets at midsubsonic speeds. (AIAA J) 336

Aceto, Leonard D. and Kollrack, Reiner Primary zone carbon monoxide levels for gas turbines. Part I—Premixed combustion. (AIAA J) 463

Adachi, J. (AIAA J, TN; see Tong, Pin)

Adamczyk, John J. Passage of a swept airfoil through an oblique gust. (JA) 281

Adams, Donald F. High-performance composite material airframe weight and cost estimating relations. (JA) 751

Adams, J. C., Jr. and Martindale, W. R. Hypersonic lifting body boundary-layer analysis at high angles of incidence. (JSR) 721

Adamson, T. C., Jr. (AIAA J; see Brilliant, H. M.)

Adcock, Jerry B. (JA; see Kilgore, Robert A.)

——(A/ A, Oct.; see Polhamus, E. C.)

Adelman, H. M. (AIAA J, TN; see Narayanaswami, R.)

Adimurthy, V. (AIAA J; see Jain, A. C.)

Adler, D. Mathematical model of a damped rate-of-climb indicator. (JA) 439

Afimiwala, K. A. and Mayne, R. W. Evaluation of optimization techniques for applications in engineering design. (JSR, SYN) 673

Afzal, Noor and Luthra, V. K. Highly accelerated laminar flow at moderately large Reynolds number. (AIAA J) 529

Agnone, Anthony Cross-flow effects on the boundary layer in a plane of symmetry. (JSR, EN) 542

Agrawal, B. N. Effects of asymmetries in the rotor and flexible joint of a dual-spin spacecraft. (JSR, SYN) 611

Agrawal, H. C. (AIAA J, TN; see Prasad, Anant)

Ahmed, Shabeer (JSR, EN; see Kumar, Rajnish)

Akay, H. (AIAA J, TC; see Oden, J. T.)

Alfriend, Kyle T. Partially filled viscous ring nutation damper. (JSR) 456

Alfriend, Kyle T. and Hubert, Carl H. Stability of a dual-spin satellite with two dampers. (JSR) 469

Allen, Jerry M. Reply by author to P. Bradshaw and K. Unsworth. (AIAA J, TC) 1295

Almqvist, H. and Jansson, B. Apparatus and techniques for safe, economical work in hostile environments. (JH) 125

Alpay, S. A. (JA, EN; see Parameswaran, V.)

Alspaugh, D. W. (AIAA J, SYN; see Huang, S. N.)

Amba-Rao, C. L. (JSR; see Singa-Rao, K.)

Ambrose, J. (AIAA J; see Dowell, E. H.)

Amiet, Roy K. Compressibility effects in unsteady thin-airfoil theory. (AIAA J, TN) 252

Amieux, Jean Claude and Liegeois, Alain Design and ground test of a pendulum-type active nutation damper. (JSR, EN) 790

——**Amieux, J. C.** Reply by author to P. K. Nguyen. (JSR, TC) 607

Anand, D. K. (JSR, EN; see Lohfeld, R. E.)

Anderson, B. D. (PS, V.32; see Morgan, R. P.)

Anderson, Jerry M. (AIAA J, TN; see Morgan, Joseph D., III)

Anderson, John D., Jr. Computations of CO_2 laser radiation absorption in SF_6-air boundary layers. (AIAA J) 1527

——Effect of kinetic rate uncertainties on gasdynamic laser gain and energy prediction. (AIAA J) 1699

Anderson, L. B., Meyer, J. W., and McLean, W. J. Turbojet exhaust reactions in stratospheric flight. (AIAA J) 56

Anderson, Neal T. (A/ A, June; see Paparozzi, Frank A.)

Ando, Shigenori (JA, SYN; see Mamada, Hiroshi)

Anno, J. N. Influence of viscosity on the stability of a cylindrical jet. (AIAA J, TN) 1137

Ansari, J. S. Instability of combustion. (AIAA J, TN) 561

Ansari, Khyruddin Akbar Nonlinear flexural vibrations of a rotating Myklestad beam. (AIAA J, TN) 98

Appa, Kari and Smith, G. Charles C. Finite element supersonic aerodynamics for oscillating parallel wings. (JA, SYN) 433

Argyropoulos, G. S., Demetriades, S. T., Doss, E. C., and Oliver, D. A. Electron nonequilibrium in open-cycle MHD generators. (AIAA J) 669

Armaly, B. F. and Lam, T. T. Reflectance from semi-infinite absorbing-scattering medium with diffuse incident radiation. (PS, V. 35) 115

Arndt, Roger E. A., Tran, Nam C., and Barefoot, Galen Turbulence and acoustic characteristics of screen perturbed jets. (AIAA J, SYN) 261

Arnold, Frederick (PS, V. 35; see Thompson, Samuel B.)

Arritt, Robert D. ARIES—A controlled sounding rocket. (A/ A, Dec.) 50

Asher, Jeffrey A. Laser velocimeter system development and testing. (PS, V. 34)

Asher, Robert B. and Matuszewski, John P. Optimal guidance with maneuvering targets. (JSR, EN) 204

Ashley, Holt (JA, EN; see Weisshaar, Terrence A.)

Ashurst, William T. (JSR; see Kryvoruka, John K.)

Asnin, Scott K. Venus orbital radar mapping in the 1980s—Mission design and analysis. (JSR, SYN) 801

Astleford, William J. (JSR; see Holster, Jesse L.)

Atzori, Bruno (AIAA J; see Aalami, Bijan)

——Generalization of Dunkerley's formula for finding the lowest critical velocity of rotating shafts. (JA, EN) 648

Au, Guenther F. and Baumgarth, Siegfried F. J. Ion thruster ESKA 8 for North-South stationkeeping of synchronous satellites. (JSR) 618

Aukstikalnis, A. J. Spacecraft computers. (A/ A, July-August) 33

Austin, Fred and Zetkov, George Simulation capability for dynamics of two-body flexible satellites. (JSR, SYN) 129

Avidor, J. M. and Lederman, S. Density survey in the hypersonic viscous shock layer on a sharp flat plate. (AIAA J, TN) 993

Azuma, Akira and Nakamura, Yoshiya Pitch damping of helicopter rotor with nonuniform inflow. (JA) 639

Babcock, W. R. (AIAA J; see Brown, R. S.)

Back, Lloyd H. and Varsi, Giulio Detonation propulsion for high pressure environments. (AIAA J) 1123

Baer, M. R., Mitchell, C. E., and Espander, W. R. Stability of Partially lined combustors with distributed combustion. (AIAA J) 475

Bagby, Frederick L. A unified view of the R&D economy. (A/ A, January) 32

Baig, M. I. and Yang, T. Y. Buckling analysis of orthogonally stiffened waffle cylinders. (JSR) 832

Baijal, S. K. and Sriramulu, A. N. Kinetic factors in heterogeneous combustion of cross-linked polymers. (AIAA J, TN) 1413

Bailey, David J. (JA; see Young, Maurice I.)

Bailey, Rodney O. (A/ A, Sept.; see Gregory, Thomas J.)

Bain, R. L., Stermole, F. J., and Golden, J. O. Liquefaction dynamics of *n*-octadecane in cylindrical coordinates. (JSR) 335

Balser, Martin, McNary, Charles A., and Nagy, Arthur E. Acoustic backscatter radar system for tracking aircraft trailing vortices. (JA) 556

Bannerot, R. B. and Wierum, F. A. Approximate configuration factors for a gray nonisothermal gas-filled conical enclosure. (PS, V. 35) 41

Barber, B. C. Thrust measuring system for electrothermal thrusters. (JSR) 549

Barefoot, Galen (AIAA J, SYN; see Arndt, Roger E. A.)

Barker, Richard M. and Hatt, Fritz Analysis of bonded joints in vehicular structures. (AIAA J, ERR) 1168

Barker, S. J. and Liepmann, H. W. Laser anemometer measurements of surface pressure distributions. (AIAA J, TN) 1758

Baronti, Paolo (AIAA J, TN; see Ferri, Antonio)

Baronti, Paolo and Miller, Gabriel Integral solution of the turbulent energy equation. (AIAA J, TN) 108

Barr, G. (AIAA J; see Horn, W.)

Barranger, John P. Study of a flight monitor for jet engine disk cracks using the critical length criterion of fracture mechanics. (PS, V. 34) 325

Barrere, M., Nadaud, L., and Lhuillier, J. N. ONERA and SNPE recent work on solid propellant combustion instability. (JSR) 33

Bartholomew, R. J. (JH; see Lavis, D. R.)

Bartos, Joan M. (AIAA J, TN; see Gerber, Nathan)

Baruch, Menahem (AIAA J, TN; see Durban, David)

Basiulis, A., Eallonardo, C. M., and Kendall, B. M. Heat-pipe system for space shuttle traveling wave tube amplifier. (PS, V. 35) 431

Bass, Robert L., III (JH; see Unruh, James F.)

Batson, James L. and Bertin, John J. Rocket exhaust flow in tube launchers. (JSR, SYN) 739

Batt, Richard G. Flight test base pressure results from sharp 8° cones. (AIAA J, TN) 555

Bauer, R. C. (JSR; see Schulz, R. J.)

Baumgarth, Siegfried F. J. (JSR; see Au, Guenther F.)

Beach, H. Lee, Jr. Evaluation of a wedge gas-sampling probe. (AIAA J, TN) 1284

Beans, E. William Total pressure recovery for a dump combustor. (JSR, EN) 433

Becker, Manfred, Robben, Frank, and Cattolica, Robert Velocity distribution functions near the landing edge of a flat plate. (AIAA J) 1247

Beckman, J. D., Hyde, J. R., and Rasool, S. I. Exploring Jupiter and its satellites with an orbiter. (A/ A, Sept.) 24

Beckwith, Ivan E. Comments on Crocco's solution and the independence principle for compressible turbulent boundary layers. (AIAA J, TN) 245

——Comment on "Spherically-symmetric supersonic source flow: a new use for the Prandtl-Meyer function." (AIAA, TC) 1615

Beichel, Rudi Propulsion systems for single-stage shuttles. (A/ A, Nov.) 32

Belytschko, Ted and Hsieh, B. J. Nonlinear transient analysis of shells and solids of revolution by convected elements. (AIAA J) 1031

Belz, R. A. (PS, V. 34; see Trolinger, J. D.)

Bencze, Daniel P. (JA; see Sorenson, Norman E.)

Bendura, R. J. (JSR; see Moog, R. D.)

Benek, J. A. and High, M. D. Transition prediction technique. (AIAA J, TN) 1425

Benenson, David M. and Genkner, August A., Jr. Local thermal equilibrium in a transient arc. (AIAA J, TN) 116
Bennett, Robert M. (JA; see Desmarais, Robert N.)
Bennett, S. B. and Dostis, I. Design of the INTELSAT IV transponder. (PS, V. 33) 373
Bera, Rajendra K. Slender delta wing with conical camber. (JA, EN) 245
——Some remarks on the solution of the lifting line equation. (JA, EN) 647
——Warping of delta wings for minimum drag. (JA, EN) 777
Bera, Rajendra K. and Ramachandra, S. M. Method of orthogonal loadings—A fresh look. (JA, EN) 650
Bergstrom, E. R., Boley, W. E., and Raghunathan, S. Unsteadiness measurements in the flow through an oblique shock wave. (AIAA J, TN) 997
Bergstrom, R. W., Jr. and Viskanta, R. Spherical harmonics approximation for radiative transfer in polluted atmospheres. (PS, V. 35) 23
Berkovits, A. Hodographic prediction of cyclic creep behavior. (JA) 10
Berman, Howard and Gran, Richard Design principles for digital autopilot synthesis. (JA) 414
Bernstein, Shmuel (JA, EN; see Iversen, James D.)
Bert, C. W. (AIAA J; see Chang, S.)
——(JA; see Reese, Charles D.)
——(JSR; see Womack, William C.)
Bert, Charles W. and Francis, Philip H. Composite material mechanics: Structural mechanics. (AIAA J, SA) 1173
Bertels, A. W. M. (AIAA J, TN; see Hsu, T. R.)
Bertin, John J. (JSR, SYN; see Batson, James L.)
Bertin, John J., Faria, H. Tom, Goodrich, Winston D., and Martindale, W. R. Effect of nose geometry on the aerothermodynamic environment of shuttle entry configurations. (JSR) 275
Besson, Jean and Boillot, Jean Aircraft localization with a time-frequency system. (JA, SYN) 193
Bevilaqua, Paul M. Evaluation of hypermixing for thrust augmenting ejectors. (JA) 348
Biblarz, Oscar and Fuhs, Allen E. Laser cavity density changes with kinetics of energy release. (AIAA J) 1083
Bicknell, J. (JA; see Parker, A. G.)
Biggs, John R. and Downhower, Walter J. Mariner Venus/ Mercury '73: A strategy of cost control. (A/ A, June) 48
Bhat, B. Rama, Rao, B. V. A., and Wagner, Hans Response of structures to random acoustic excitation——An experimental study. (JSR, SYN) 213
Bhatia, Kumar G. An automated method for determining the flutter velocity and the matched point. (JA) 21
Billig, Frederick S. (AIAA J, TC; see Waltrup, Paul J.)
——(PS, V. 34; see Orth, R. C.)
Billig, L. O. Automatic detection and suppression of inlet buzz. (PS, V. 34) 453
Birch, Stanley F. (JSR, EN; see Rudy, David H.)
Bischoff, David, Duffy, Robert, and Kaufman, Howard Automatic control of adverse yaw in the landing environment using optimal control theory. (JA, SYN) 499
Blachier, Bruno, Feve, Philippe, and Koenig, Walter A. An 11-13 GHz satellite communications repeater. (PS, V. 32) 123
Blahnik, James E. and Davis, Donald R. Advanced applications of the space shuttle. (JSR, EN) 117
Blevis, B. C. and Card, M. L. The implications of satellite technology for television broadcasting in Canada. (PS, V. 32) 281
Bloom, A. M. and Jen, H. Roll-up of aircraft trailing vortices using artificial viscosity. (JA, EN) 714
Bohon, Herman L. (JA; see Musgrove, Max D.)
Boillot, Jean (JA, SYN; see Besson, Jean)
Boland, P., Samin, J.-C., and Willems, P. Y. Stability analysis of interconnected deformable bodies in a topological tree. (AIAA J) 1025
Boley, W. E. (AIAA J, TN; see Bergstrom, E. R.)
Boothe, E. M. and Ledder, H. J. Direct side force control for STOL crosswind landings. (JA) 631
Born, G. H. (JSR; see Duxbury, T. C.)
Bornstein, J. (PS, V. 34; see Lederman, S.)
Boscola, Edward J. In-flight oxygen generation for aircraft breathing systems. (JA) 444
Boyle, Robert E., Jr. and Viets, Hermann Eddy viscosity for variable density coflowing streams. (JA, SYN) 721
Bracco, Frediano V. Applications of steady-state spray equations to combustion modeling. (AIAA J) 1534
Bradley, R. G. and Wray, W. O. A conceptual study of leading-edge-vortex enhancement by blowing. (JA) 33
Bradshaw, George B. and Postula, Frank D. Beginning of mission flight data on the transit RTG. (JSR, SYN) 675
Bradshaw, P. and Unsworth, K. Comment on "Evaluation of Preston tube calibration equations in supersonic flow." (AIAA J, TC) 1293
Braha, J., Salomon, M., Seginer, A., and Rom, J. Considerations for the design of a second generation induction driven transonic wind tunnel. (JA) 729
Brainerd, Carl H. (JA; see Kohlman, David L.)
Bramlette, T. Taz Slot heating associated with roll control fins. (JSR, EN) 797
——Simple technique for predicting Type III and IV shock interference. (AIAA J, TN) 1151
Brashears, M. R. and Hallock, James N. Aircraft wake vortex transport model. (JA) 265
Bratanow, Theodore and Ecer, Akin Sensitivity of rotor blade vibration characteristics to torsional oscillations. (JA) 375
——**and Ecer, Akin** On the applications of the finite element method in unsteady aerodynamics. (AIAA J) 503
——**and Ecer, Akin** Analysis of three-dimensional unsteady viscous flow around oscillating wings. (AIAA J) 1577
Brederlow, G. and Witte, K. J. Effective electrical conductivity and related properties of a nonequilibrium high pressure MHD plasma. (AIAA J) 83
Brederlow, G., Witte, K. J., and Zinko, H. Performance of a Faraday rare gas alkali MHD generator. (AIAA J) 481
Brennan, P. J. (PS, V. 35; see Kirkpatrick, J. P.)
Brent, John A. (PS, V. 34; see Johnson, Bruce V.)
Breslin, John P. Notes from abroad. (JH, E) 1
——Dynamic forces exerted by oscillating cables. (JH) 19
Brewer, G. Daniel The case for hydrogen-fueled transport aircraft. (A/ A, May) 40
Brilliant, H. M. and Adamson, T. C., Jr. Shock wave boundary-layer interactions in laminar transonic flow. (AIAA J) 323
Brink, Donald F. (JSR, EN; see Greene, George C.)
Briot, M. (JSR; see Costes, A.)
Broadwell, J. E. (AIAA J, SYN; see Shackleford, W. L.)
Brockman, Philip and Seals, R. K., Jr. Analysis of laser measurement of high-altitude aircraft emissions. (AIAA J) 651
Brode, H. L. (AIAA J; see Glass, I. I.)
Brooks, David R. Mission strategy for combined comet-asteroid flybys. (JSR, EN) 115
Brown, Clarence A., Jr. (JSR; see Campbell, James F.)
Brown, Glen J. (A/ A, February; see Seemann, Gerald R.)
Brown, John V. (PS, V. 33; see Hanson, Charles W.)
Brown, R. S., Erickson, J. E., and Babcock, W. R. Combustion response function measurements by the rotating valve method. (AIAA J) 1502
Brownstein, Barry J. (JA; see Ellis, Stanley H.)
Bruckner, Adam P. and Jahn, Robert G. Exhaust plume structure in a quasi-steady MPD accelerator. (AIAA J) 1198
Brunelle, E. J. and Robertson, S. R. Initially stressed Mindlin plates. (AIAA J) 1036
Brussat, T. R. (JA; see Ekvall, J. C.)
Bryan, Curtis V. and Pennington, James H. RPV potential for naval applications. (A/ A, Oct.) 58
Buchele, Donald R. and Lesco, Daniel J. Pyrometer for measurement of surface temeperature distribution on a rotating turbine blade. (PS, V. 34) 347
Bulmer, Bruce M. Radial base heat-transfer gradients in turbulent flow. (JSR, EN) 798
Burbank, R. A. (AIAA J, TN; see Kirchhoff, R. H.)
Burcham, F. W., Jr. (PS, V. 34; see Smith, R. H.)
Burgess, Ray W., Jr. (PS, V. 34; see Couch, Robert P.)
Burnham, David C. and Sullivan, Thomas E. Influence of flaps and engines on aircraft wake vortices. (JA, EN) 591
Burns, J. J. (JSR; see Vorreiter, J. W.)
Burton, T. D. Approximate impact dispersion methods for symmetric entry vehicles. (JSR) 777

Caine, P. (AIAA J; see Walkden, F.)
Cameron, James M. (AIAA J, TN; see Waltrup, Paul J.)
Campbell, David H. F-12 series aircraft propulsion system performance and development. (JA) 670
Campbell, David R. Separation over a flat plate-wedge configuration at oceanic Reynolds numbers. (JH, SYN) 3
Campbell, D. R. and Quinn, B. Test results of a VTOL propulsion concept utilizing a turbofan powered augmentor. (JA) 467
Campbell, James F. and Brown, Clarence A., Jr. Experimental wake flow properties of a Viking '75 entry vehicle. (JSR) 11
Card, M. L. (PS, V. 32; see Blevis, B. C.)
Cardea, G. C. and Torvik, P. J. Cavity growth and collapse phase of hydraulic ram. (JA, EN) 252

Cardou, Alain Necessary condition for piecewise uniform optimum design under frequency constraint. (AIAA J, TN) 1415

Carey, Lee and Ellis, Russell Extendible exit cone development for the C4 third-stage motor. (JSR) 624

Carleton, C. H. (JSR; see Francis, E. C.)

Carlson, Leland A. Engineering approximations for radiating nonequilibrium shock layers. (AIAA J) 832

——Inverse transonic flow calculations using experimental pressure distributions. (AIAA J, TN) 571

Carnegis, I. A. Engine sensory requirements for energy management. (PS, V. 34) 419

Carney, John F., III (AIAA J, SYN; see Stuart, Richard J.)

Carpenter, Robert T. (JSR, SYN; see Frey, Elmer J.)

Carroll, John T. Dynamic flow studies by application of pressure aad velocity sensors on axial flow fan blades. (PS, V. 34) 115

Carruthers, George R. Operation Kohoutek preliminary results. (A/ A, Oct.) 42

Carta, F. O. (AIAA J; see Commerford, G. L.)

Carter, L. (AIAA J; see Horn, W.)

Carter, Richard P. (AIAA J, TN; see Murphree, David L.)

Cary, Aubrey M., Jr. (JSR, EN; see Hefner, Jerry N.)

Casseday, E. D. (JSR; see Vicario, A. A., Jr.)

Cattolica, Robert (AIAA J; see Becker, Manfred)

Caveny, L. H. (AIAA J; see Kubota, N.)

Cavin, R. K., III (AIAA J, TC; see Hymas, C. E.)

Cebeci, Tuncer Calculation of three-dimensional boundary layers I. Swept infinite cylinders and small cross flow. (AIAA J) 779

——Attachment-line flow on an infinite swept wing. (AIAA J, TN) 242

Cebeci, Tuncer and Witherspoon, G. F. Theoretical suction and pressure distribution bounds for flow separation in retarded flow. (JA, EN) 61

Cenkner, August A., Jr. (AIAA J, TN) see Benenson, David M.)

Cerini, D. J. NaK-nitrogen liquid metal MHD converter tests at 30 kw. (AIAA J) 78

Cezairliyan, Ared A high-speed (subsecond) system for accurate thermophysical measurements at high temperatures. (PS, V. 35) 205

Chadwick, William R. External-store loads using nonplanar lifting surface theory. (JA) 181

Chambers, H. F., Jr. (PS, V. 34; see Matthews, B. J.)

Chakrabarti, A. K. (JSR, EN; see Durgapal, U. C.)

——Note on boundary layer in a dusty gas. (AIAA J, TN) 1136

Chan, S. K. (AIAA J; see Glass, I. I.)

——Stretch time of scribed metal diaphragms. (AIAA J, TN) 1149

Chan, Y. Y. Pressure sources for a wave model of jet noise. (AIAA J, TN) 241

Chang, I.-Shih and Chow, W. L. Mach disk from underexpanded axisymmetric nozzle flow. (AIAA J) 1079

Chang, S. and Bert, C. W. Analysis of longitudinal thickness-shear stiffness of a monolayer filamentary composite. (AIAA J) 1358

Channel, L. E. (JA; see Heppe, R. R.)

Chapter, John J. and Johnsen, Gary W. Thermoelectric device application to spacecraft thermal control. (JSR) 159

Chasteau, V. A. L. (AIAA J, TN; see Erens, P. J.)

Chaturvedi, B. K. (AIAA J; see Rastogi, R. P.)

Chazen, M. L. and Sanscrainte, W. Space shuttle bipropellant RCS engine. (JSR) 685

Chen, C. H. S. Finite twisting and bending of thin orthotropic strip of lenticular section. (AIAA J, TN) 247

Chen, C. H. S. and Tabaddor, F. Effective moduli of layered composites. (JSR, EN) 262

Chetrit, M. (AIAA J, TN; see Kirszenblat, A.)

Chien, Kuei-Yuan Hypersonic, turbulent skin-friction and heat-transfer measurements on a sharp cone. (AIAA J) 1522

Childs, Dara W. and Hardison, Therman L. A movable-mass attitude stabilization system for cable-connected artificial-g space stations. (JSR) 165

Childs, Morris E. (JA; see Sun, Chen-Chih)

Chmielewski, G. E. Boundary-layer considerations in the design of aerodynamic contractions. (JA) 435

Choate, Raoul (JSR, SYN; see Jaffe, Leonard D.)

Chou, P. C. (AIAA J; see Tsou, F. K.)

Chou, Y. S. Axisymmetric cavity flows past slender bodies of revolution. (JH) 13

Chow, W. L. (AIAA J; see Chang, I.-Shih)

Christie, Fred A. and DeVriendt, Andre B. Diffraction effects encountered in the measurement of bidirectional reflectance from square pyramids. (PS, V. 35) 167

Chu, Shih-Chi A numerical thermoelastoplastic solution of a thick-walled tube. (AIAA J) 176

Chu, Sing and Widnall, Sheila E. Prediction of unsteady airloads for oblique blade-gust interaction in compressible flow. (AIAA J) 1228

——**and Widnall, Sheila E.** Lifting-surface theory for a semi-infinite wing in oblique gust. (AIAA J) 1672

Chung, P. M., Talbot, L., and Touryan, K. J. Electric probes in stationary and flowing plasmas: Part 1. Collisionless and transitional probes. (AIAA J, SA) 133

——Electric probes in stationary and flowing plasmas: Part 2. Continuum probes. (AIAA J, SA) 144

Cicerone, R. J. (AIAA J, TN; see Stolarski, R. S.)

Ciffone, D. L. Correlation for estimating vortex rotational velocity downstream dependence. (JA, EN) 716

——(JA, EN; see Orloff, K. L.)

Ciffone, D. L. and Orloff, K. L. Axial flow measurements in trailing vortices. (AIAA J, TN) 1154

Clare, Thomas A. (AIAA J; see Cohen, Charles J.)

Clark, Alan F. and Hust, Jerome G. A review of the compatibility of structural materials with oxygen. (AIAA J, SA) 441

Clark, K. J., Nardo, C. T., Jaffe, N. A., and Covington, M. A. Cooling by discrete and porous injection into a turbulent, supersonic boundary layer. (AIAA J) 1679

Clark, R. N. and Fosth, D. C. Analysis and test of a precision pulse-rebalance gyroscope. (JSR, EN) 264

Clark, S. K., Dodge, R. N., and Nybakken, G. H. Dynamic properties of aircraft tires. (JA) 166

Clarkson, B. L. British contribution to structural response to noise. (JA) 697

Cliff, E. M. (AIAA J, SYN; see Vincent, T. L.)

Cline, Michael C. Computation of steady nozzle flow by a time-dependent method. (AIAA J, SYN) 419

Cloupeau, Michel (AIAA J; see Lengrand, Jean-Claude)

Coates, R. L. (JSR, EN; see Horton, M. D.)

Cochran, John E., Jr. Concerning lateral dynamics of flight on a great circle. (AIAA J, TN) 557

Coe, Paul L., Jr. A vortex entrainment model applied to slender delta wings. (AIAA J, TN) 110

Coe, Paul L., Jr. and Kulla, D. Effect of upper-surface blowing on static longitudinal stability of a swept wing. (JA) 537

Cohen, Charles J., Clare, Thomas A., and Stevens, Frank L. Analysis of the nonlinear rolling motion of finned missiles. (AIAA J) 303

Cohen, Gerald A. Comment on "buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads." (AIAA J, TC) 1775

Cohen, Leonard S. (JA; see Couch, Harold T.)

Cohen, M. J. and Portnoy, H. Irrotational subsonic flow of an ideal gas in two-dimensional ducts—Optimal ducts and ducts with plane sonic exits. (AIAA J) 608

Cohen, N. S., Fleming, R. W., and Derr, R. L. Role of binders in solid propellant combustion. (AIAA J) 212

Cohen, Victor D. and Savet, Paul H. Attitude dynamics of an orbiting electromagnet. (JSR, EN) 252

Colby, Starr J., Franklin, Charles E., and Prins, Dougal W. S. Command and control challenge for RPVs. (A/ A, Sept.) 64

Cole, John E., III Noise characteristics of a turbulent crosswind jet. (AIAA J) 198

Coleman, G. T. and Stollery, J. L. Incipient separation of axially symmetric hypersonic turbulent boundary layers. (AIAA J, TN) 119

Coleman, Hugh W. and Lemmon, E. Clark Prediction of turbulent heat transfer and pressure on swept leading edges. (JSR) 376

Collette, Rene The European communication satellite program. (PS, V. 32) 213

Collier, Robert P. and Scott, David S. Simple spectroscopic technique for the arc region of plasma accelerators. (AIAA J, TN) 103

Collins, D. J. (AIAA J; see Kosakoski, R. A.)

Collins, Donald J. Laminar viscous-inviscid interactions at transonic speeds. (AIAA J, TN) 1146

Collins, Donald J. and Krupp, James A. Experimental and theoretical investigations in two-dimensional transonic flow. (AIAA J) 771

Collins, Jon D., Hart, Gary C., Hasselman, T. K., and Kennedy, Bruce Statistical identification of structures. (AIAA J) 185

Collins, T. P. (JA; see Kutschenreuter, P. H., Jr.)

Colunga, D. (AIAA J, TC; see Hymas, C. E.)

Colwell, G. T. (AIAA J; see Williams, C. L.)

Commerford, G. L. and Carta, F. O. Unsteady aerodynamic response of a two-dimensional airfoil at high reduced frequency. (AIAA J) 43

Connell, G. M. and Gray, A. H. Frequency-dependent wave damping in the time domain. (JH, EN) 167

Cook, C. W. (JA; see Heppe, R. R.)

Cook, Robert D. Comment on "Effect of higher order terms in certain nonlinear finite element models." (AIAA J, TC) 1290

Cook, William Sidney Statistical models for Jupiter's troposphere and the

NH_3-H_2O cloud systems. (JSR) 512
Cooley, D. E. (JA; see Redd, L. T.)
Cooper, A. A. G. Effect of stress on the directions of stiffness extrema. (AIAA J, TN) 1609
Cooper, G. L. and Schmars, W. T. Selected applications of a biaxial tiltmeter in the ground motion environment. (JSR) 530
Cooper, James R. and Hankey, Wilbur L., Jr. Flowfield measurements in an asymmetric axial corner at M = 12.5. (AIAA J) 1353
Cooper, Larry and Putz, Kurt E. Generalized flow in gaps and slots including the effects of ablation. (JSR) 287
Costes, A., Landrault, C., and Briot, M. Power conditioning and control unit for the French cesium contact ion thruster. (JSR) 759
Cothran, C. A. (AIAA J; see Schnurr, N. M.)
Couch, Harold T. and Cohen, Leonard S. Attenuation of instabilities in propulsion system combustors. (JA) 571
Couch, Robert P., Rossbach, Dennis R., and Burgess, Ray W., Jr. Sensing incipient engine failure with electrostatic probes. (PS, V. 34) 515
Covington, M. A. (AIAA J; see Clark, K. J.)
Cowley, John R., Jr. (JSR; see Dyer, John W.)
Craig, R. R., Jr. and Su, Y.-W. T. On multiple-shaker resonance testing. (AIAA J) 924
Crawford, Davis H. Reply by author to K. M. Forster. (AIAA J, TC) 1168
Creager, Matthew (JA; see Ekvall, J. C.)
Crimi, Peter Analysis of helicopter rotor blade stall flutter. (JA) 407
Crowe, C. T. (JSR, EN; see Swanson, D. E.)
Cuccia, C. Louis and Lee, Wilfred E. PSK and QPSK modulation and demodulation in digital satellite-to-satellite and satellite-to-ground links. (PS, V. 33) 479
Cullian, Charles A. (A/ A, February; see Seemann, Gerald R.)
Cummings, Richard D. Thermal control of the large space telescope. (PS, V. 35) 489
Cunningham, Atlee M., Jr. Oscillatory supersonic kernel function method for interfering surfaces. (JA) 664
——Oscillatory supersonic kernel function method for isolated wings. (JA) 609
Cunningham, Edward P. Probability of crashing for a terrain-following missile. (JSR, EN) 257
——Guidance of a bank-to-turn missile with altitude control correction requirements. (JSR, EN) 340
Cunnington, G. R. (PS, V. 35; see Tien, C. L.)
Curwen, K. R. Turbine blade pyrometer system in the control of the concorde engine. (PS, V. 34) 399
Cutchins, Malcolm A. (AIAA J; see Orlin, Peter A.)
DaDeppo, Donald A. and Schmidt, Robert Stability of two-hinged circular arches with independent loading parameters. (AIAA J, TN) 385
Daily, J. W., Raeder, J., and Zankl, G. Effect of finite chemical reaction rates on heat transfer to the walls of combustion-driven supersonic MHD generator channels. (AIAA J, TN) 403
D'Amario, Louis A. and Edelbaum, Theodore N. Minimum impulse three-body trajectories. (AIAA J, SA) 455
Danberg, James E. (AIAA J, TN; see Kayser, Lyle D.)
Danberg, James E. and Fansler, Kevin S. Additional two-dimensional wake and jet-like flows. (AIAA J, TN) 1432
Daniel, B. R. (JSR; see Janardan, B. A.)
Daniel, I. M. (AIAA J; see Rowlands, R. E.)
Dat, Jacques, Fabre, Jean, and Sanjurjo, Liber Simulation of the speed control for gas turbines using vibrating reed regulators. (JA) 624
Daughetee, C. C. Drop testing naval aircraft and the VSD landing gear dynamic test facility. (JA) 758
David, Thomas S. and Srinivasan, A. V. Flutter of coaxial cylindrical shells in an incompressible axisymmetric flow. (AIAA J) 1631
Davies, M. S. (JSR, EN; see Pande, K. C.)
Davis, Donald R. (JSR, EN; see Blahnik, James E.)
Davis, Rodman Interactive-TV networkung: A Modest proposal for using domestic communication satellites. (A/ A, April) 62
Davis, R. T. (AIAA J; see Ghia, U.)
——(AIAA J; see Ghia, K. N.)
——(AIAA J, ERR; see Ghia, K. N.)
Davison, E. H. (PS, V. 32; see Franklin, C. A.)
Dayman, Bain, Jr. and Fiore, Anthony W. Ground testing and simulation—An overview: Part II: Aerodynamic testing. (A/ A, June) 56
DeAtkine, David D. Mission planning aspects of Skylab Earth resources experiments. (JSR, EN) 266
DeBra, D. B. (JSR; see Lyons, M. G.)
DeBrock, S. C. and Rudey, C. J. Agena primary and integrated secondary propulsion systems. (JSR) 769
Deepak, Desh (AIAA J, TN; see Rastogi, R. P.)
Demetriades, S. T. (AIAA J; see Argyropoulos, G. S.)
Demirjian, A. M. (PS, V. 34; see Louis, J. F.)
De Montlivault, J. L. (PS, V. 32; see Hiergeist, F.)
Denman, E. D. and N3lson, Paul, Jr. Comment on "Comparison of linear and Riccati equations used to solve optimal control problems." (AIAA J, TC) 575
Der, Joe, Jr. and Stauffer, John K. On the inverse calculation of the mass flow parameter. (JA, EN) 121
Derr, R. L. (AIAA J; see Cohen, N. S.)
DeSantis, M. J. (AIAA J; see Galowin, L. S.)
Desmarais, Robert N. and Bennett, Robert M. An automated procedure for computing flutter eigenvalues. (JA) 75
de Virgilio, Miguel A., Wells, Gerald R., and Schiring, Earl E. Optimal guidance for aerodynamically controlled re-entry vehicles. (AIAA J) 1331
DeVriendt, Andre B. (PS, V. 35; see Christie, Fred)
Dewan, E. M. (AIAA J; see Rosenberg, N. W.)
Dhameja, R. K., Saradhy, Y. P., and Jain, V. K. Influence of lithium fluoride on the burning rate of AP-polyester propellant. (AIAA J, TN) 874
Dhoopar, B. L. (AIAA J, TC; see Vendhan, C. P.)
Di Capua, Marco S. and Kurtz, Helmut L. Electrolytic capacitor power source design for quasi-steady magnetoplasmadynamic arcs. (JSR) 554
Dillow, C. F. (PS, V. 35; see Schmitt, R. J.)
Dodge, R. N. (JA; see Clark, S. K.)
Dokmeci, M. C. (AIAA J, TN; see Gulati, S. T.)
Dominguez, P. J. and Kosson, R. L. Development of a high capacity cryogenic heat pipe. (PS, V. 35) 395
Donaldson, Coleman duP., Snedeker, Richard S., and Sullivan, Roger D. Calculation of aircraft wake velocity profiles and comparison with experimental measurements. (JA) 547
——(AIAA J; see Lewellen, W. S.)
Dong, W. N. and Schlack, A. L., Jr. Stability of a spinning satellite with flexible antennas. (AIAA J, TN) 1737
Dorsch, Robert G. (JA, SYN; see Reshotko, Meyer)
Doss, E. D. (AIAA J; see Argyropoulos, G. S.)
Doss, E. D., Dwyer, H. A., and Hoffman, M. A. Influence of segmentation and ambipolar diffusion on MHD nonequilibrium boundary layers. (AIAA J) 155
Dostis, I. (PS, V. 33; see Bennett, S. B.)
Dougherty, James E. Leadership. (JA, E) 1
Dowell, E. H. (AIAA J; see Vaicaitis, R.)
Dowell, E. H., Srinivasan, A. V., McLean, J. D., and Ambrose, J. Aeroelastic stability of cylindrical shells subjected to a rotating flow. (AIAA J) 1644
Downhower, Walter J. (A/ A, June; see Biggs, John R.)
Driftmyer, Richard T. Thick, two-dimensional, turbulent boundary layers separated by steps and slot jet. (AIAA J) 21
Duck, Kenneth I. (PS, V. 33; see Isley, William C.)
Dudzinski, T. J. (PS, V. 34; see Krause, L. N.)
Duffy, Robert (JA, SYN; see Bischoff, David)
Duiven, Edward M. Suboptimal linear filtering. (JSR, EN) 196
Dumas, L. N. Temperature control of the Mariner-class spacecraft: A seven-mission summary. (S, V. 35) 531
Dunavant, James C. and Throckmorton, David A. Aerodynamic heat transfer to RSI tile surfaces and gap intersections. (JSR, EN) 437
Duncan, J. W., Hamada, S. J., and Wong, W. C. Polarization isolation characteristics of a dual-beam reflector antenna. (PS, V. 33) 331
Duncan, T. C. (AIAA J; see Salzman, P. K.)
Dunlap, R., Willoughby, P. G., and Hermsen, R. W. Flowfield in the combustion chamber of a solid propellant rocket motor. (AIAA J, TN) 1440
Dunn, Michael G. (AIAA J, TC; see Kang, Sang-Wook)
Durban, David and Baruch, Menahem Floating piecewise linear approximation of a nonlinear constitutive equation. (AIAA J, TN) 868
Durban, D. and Libai, A. Buckling of short cylindrical shells under axial compression. (AIAA J) 909
Durgapal, U. C. and Chakrabarti, A. K. Regression rate studies of aniline formaldehyde—red fuming nitric acid hybrid system. (JSR, EN) 447
Durgapal, U. C. and Venugopal, V. K. Hypergolic ignition of rocket propellants with nitric acid containing dissolved nitrogen tetroxide. (AIAA J, TN) 1611
Durvasula, S. (AIAA J, TN; see Prabhu, M. S. S.)
Duxbury, T. C., Born, G. H., and Jerath, N. Viewing Phobos and Deimos for navigating Mariner 9. (JSR) 215
Dwyer, H. A. (AIAA J; see Doss, E. C.)
Dyer, John W., Nunamaker, Robert R., Cowley, John R., Jr., and Jackson, Robert W. Pioneer Venus mission plan for atmospheric probes and an orbiter. (JSR) 710
Dylewski, T. J. Reply by author to R. G. Easterling. (AIAA J, TC) 734
Eades, J. B., Jr. Analytical solution for extensible tethers. (JSR, EN) 254

Fallonardo, C. M. (PS, V. 35; see Basiulis, A.)
Easterling, Robert G. Comment on "Criteria for selecting curves for fitting to data." (AIAA J, TC) 733
Eatock, H. C., Plucinsky, J. C., and Saintsbury, J. A. Designing small gas turbine engines for low noise and clean exhaust. (JA) 616
Eberle, William R. Reduction of TACV power requirements by multiple-stage air cushions. (JA) 154
Eeer, Akin (AIAA J; see Bratanow, Theodore)
——(JA; see Bratanow, Theodore)
Eckerman, Jerome A NASA program to characterize propagation and interference for space applications. (PS, V. 32) 327
Eckhardt, G., Haberle, H., Reidel, B., and Rupp, H. Results of German TDMA experiments. (PS, V. 33) 431
Edelbaum, Theodore N. (AIAA J, SA; see D'Amario, Louis A.)
Edelstein, F. (PS, V. 35; see Harwell, W.)
Edgar, J. M. Systems analysis of Titan family for orbiting multiple communication satellites. (PS, V. 32) 405
Edquist, C. T. Correlation of radiative heating calculations for Venus entry. (JSR, EN) 440
Edwards, Terry L. and Kaplan, Marshall H. Automatic spacecraft detumbling by internal mass motion. (AIAA J) 496
Eggers, J. M. (AIAA J, SYN; see Rogers, R. C.)
Eggers, Philip E. and Ridihalgh, John L. Cost-effective radioisotope thermoelectric generator designs involving Cm-244 and Pu-238 heat sources. (JSR) 704
Ehhalt, D. H. and Heidt, L. E. Vertical profiles of molecular H_2 and CH_4 in the stratosphere. (AIAA J) 822
Eickhoff, H. E. A note on interacting boundary layers. (AIAA J, TN) 392
Ekvall, J. C., Brussat, T. R., Liu, A. F., and Creager, Matthew Preliminary design of aircraft structures to meet structural integrity requirements. (JA) 136
Elishakoff, I. B. Vibration analysis of clamped square orthotropic plate. (AIAA J) 921
Elleman, Daniel D. (A/ A, July-August, see Wang, Taylor G.)
Elliott, Jarrell R. (JA, EN; see Tiroshi, Igal)
Ellis, Russell (JSR; see Carey, Lee)
Ellis, Stanley H. and Brownstein, Barry J. Inlet distortion evaluation from limited high-response instrumentation. (JA) 112
Elrod, Harold G., Jr. (AIAA J; see Kao, Tsai-tse)
——(AIAA J; see Sood, Des R.)
Elsbernd, Arnold A. and Hoffman, Joe D. Maximum thrust nozzles for gas particle flows. (AIAA J) 283
Elzweig, Sheldon (AIAA J, TN; see Ferri, Antonio)
Emory, M. Lawrence (AIAA J, TN) see Hillard, Mervin E., Jr.)
Engel, Carl D. and Farmer, Richard C. Radiation-gas dynamic shock layer coupling. (AIAA J, TN) 1144
Engersbach, N. H. (AIAA J; see Gruver, W. A.)
Englund, D. R., Jr. (PS, V. 34; see Nieberding, W. C.)
Erens, P. J. and Chasteau, V. A. L. Laminar boundary-layer response to freestream disturbances. (AIAA J, TN) 93
Erickson, J. E. (AIAA J; see Brown, R. S.)
Erickson, Lars E. Transition effects on slender vehicle stability and trim characteristics. (JSR) 3
——Transition effects on slender vehicle stability and trim characteristics. (JSR, ERR) 448
——Correlation of attitude effects on a slender vehicle transition. (AIAA J) 523
——Blowing simulation of asymmetric transition effects on slender ablating vehicles. (JSR, EN) 58
Ericsson, L. E., Guenther, R. A., Stake, W. R., and Olmsted, G. S. Combined effects of nose bluntness and cone angle on unsteady aerodynamics. (AIAA J, TN) 729
Escher, William J. D. Future availability of liquid hydrogen. (A/ A, May) 55
Eslami, M. R. (AIAA J; see Sabbaghian, M.)
Espander, W. R. (AIAA J; see Baer, M. R.)
Evans, J. S. (AIAA J; see Schexnayder, C. J.)
Evans, John S., Schexnayder, Charles J., Jr., and Grose, William L. Effects of nonequilibrium ablation chemistry on Viking radio blackout. (JSR) 84
——Schexnayder, Charles J., Jr. and Grose, William L. Reply by authors to D. E. Jensen (JSR, TC) 736
Evbuoma, S. M., Walker, J. S., and Robertson, J. M. Higher order boundary layer for viscous flow past sharp wedges. (AIAA J, TN) 1001
Fabre, Jean (JA; see Dat, Jacques)
Fairbanks, D. R. (PS, V. 35; see Vachon, W. A.)
Fallin, E. H., III Time requirements for multiple intersatellite transfers. (JSR, EN) 445
Fanoe, Ole Optimum propeller in viscous flow. (JA, EN) 241
Fansler, Kevin S. (AIAA J, TN; see Danberg, James E.)
Faria, H. Tom (JSR; see Bertin, John J.)
Farmer, Richard C. (AIAA J, TN; see Engel, Carl D.)
Farr, A. P. and Schumacher, G. A. System for evaluation of F-15 inlet dynamic distortion. (PS, V. 34) 59
Farrenkopf, R. L. (AIAA J; see Scher, M. P.)
Farshad, Mehdi Variations of eigenvalues and eigenfunctions in continuum mechanics. (AIAA J, TN) 560
Farshi, B. (AIAA J; see Schmit, L. A., Jr.)
Faulkner, H. B. The cost of noise reduction in intercity commercial helicopters. (JA) 89
Favier, Daniel (AIAA J, TN; see Maresca, Christian)
Fearn, D. G. (AIAA J; see Philip, C. M.)
Fearn, D. G., Hastings, R., Philip, C. M., Harbour, P. J., and Watson, H. H. H. RAE/ Culham T4 ten centimeter electron-bombardment Mercury ion thruster. (JSR) 481
Fearn, Richard and Weston, Robert P. Vorticity associated with a jet in a cross flow. (AIAA J) 1666
Fein, H. L. and Shelor, D. E. Testing the external burning propulsion concept. (JSR, EN) 538
Feldman, K. T., Jr. (PS, V. 35; see Roberts, C. C., Jr.)
Felleman, Philip G. (A/ A, July-August; see Fraser, Donald C.)
Feller, W. V. (AIAA J, TN; see Hillard, M. E., Jr.)
Felton, Lewis P. (AIAA J, TN; see Fuchs, Moshe)
Ferri, Antonio, Elzweig, Sheldon, and Baronti, Paolo Numerical solution of transonic flows about quasi-cylindrical configurations. (AIAA J, TN) 1447
Fettis, Henry E. Determination of bending influence coefficients from bending slope data. (AIAA J, TN) 112
——Method for determining the effect of added stores on aeroelastic systems. (AIAA J, TN) 1733
Feve, Philippe (PS, V. 32; see Blachier, Bruno)
Fidler, John E. Approximate method for estimating wake vortex strength. (AIAA J) 633
Filotas, L. T. Oblique compressible Sears function. (AIAA J, TN) 1601
Finke, Robert C. (JSR, EN; see Kerslake, William R.)
——(PS, V. 33; see Herron, B. G.)
Finke, R. C. (JSR; see Nakanishi, S.)
Finley, S. G. (JSR; see Thornton, C. L.)
Fiore, Anthony W. (A/ A, June; see Dayman, Bain, Jr.)
Fiorino, Thomas D. and Rasmussen, Maurice L. Integral approximation for slender-body shock shapes in hypersonic flow. (AIAA J, TN) 1735
Fischer, Michael C. and Weinstein, Leonard M. Turbulent compressible three-dimensional mean flow profiles. (AIAA J, SYN) 131
Fitzsimmons, Richard D. Concorde: Testing the market. (A/ A, July-August) 46
Flaherty, Richard J. Arbitrary pressure gradient integral technique for predicting boundary layer and thermal parameters. (JA) 293
Flanders, H. R. (JSR; see Lebsock, K. L.)
Flax, Alexander H. Rayleigh and Ritz revisited. (AIAA J, TN) 224
——Comment on "Correlation of wing-body combination lift data." (JA, TC) 303
Fleming, R. W. (AIAA J; see Cohen, N. S.)
Fletcher, L. S. (PS, V. 35; see Miller, R.)
——(AIAA J; see Galowin, L. S.)
Fletcher, L. S. and Miller, R. G. Thermal conductance of gasket materials for spacecraft joints. (PS, V. 35) 335
Fletcher, L. S. and Shoup, T. E. Optimum design of elastomeric gaskets for combined thermal and vibration performance. (JSR, EN) 344
Follett, W. H., Ostwald, L. T., Simpson, J. O., and Spencer, T. M. Decade of improvements to orbiting solar observatories. (JSR) 327
Forney, J. A. (JSR; see Masek, R. V.)
Forrestal, M. J. and Overmier, D. K. An experiment on an impulse loaded elastic ring. (AIAA J, TN) 722
Forster, Karl M. Comment on "A graphical method for the investigation of shock interference phenomena." (AIAA J, TC) 1167
Fosth, D. C. (JSR, EN; see Clark, R. N.)
Foudriat, Edwin C. Aircraft 4-D constant velocity control system. (JA) 326
Fowler, Wallace T. (JSR; see Garcia, Frank, Jr.)
——(AIAA J; see Gottlieb, R. G.)
Fox, Herbert Looking before you leap—The state of the art of technology assessment. (A/ A, Nov.) 40
Fox, John H. On the structure of jet plumes. (AIAA J, TN) 105
Francis, E. C., Carleton, C. H., and Lindsey, G. H. Viscoelastic fracture of solid propellants in pressurization loading conditions. (JSR) 691
Francis, Philip H. (AIAA J, SA; see Bert, Charles W.)
Franklin, C. A. and Davison, E. H. High-power communications

technology satellite for the 12- and 14-GHz bands. (PS, V. 32) 87
Franklin, Charles E. (A/ A, Sept.; see Colby, Starr J.)
Franks, W. J. (AIAA J, TN; see Wortman, A.)
——Comments on "Solution of nonlinear problems in magnetofluiddynamics and non-Newtonian fluid mechanics through parametric differentiation." (AIAA J, TC) 1455
Fraser, Donald C. and Felleman, Philip G. Digital fly-by-wire—Computers lead the way. (A/ A, July-August) 25
Free, Bernard and Huson, George Selected comparisons among propulsion systems for communications satellites. (PS, V. 33) 245
Freeman, W. T., Jr. (JSR; see Vicario, A. A., Jr.)
Frey, Elmer J., Raab, Bernard, Schock Alfred, and Carpenter, Robert T. Spacecraft standardization through nuclear power. (JSR, SYN) 741
Friedlander, Alan L. Comet Encke flyby—Asteroid rendezvous mission. (JSR, EN) 270
——(JSR; see Niehoff, John C.)
Friedman, Herbert Exotic astrophysics. (A/ A, April) 20
Friedmann, P. and Silverthorn, L. J. Aeroelastic stability of periodic systems with application to rotor blade flutter. (AIAA J) 1559
Frohn, A. (AIAA J, TN; see Garen, W.)
Frutkin, Arnold W. Apollo-Soyuz: A substantial engagement. (A/ A, Dec.) 24
Fry, R. S. and Nicholls, J. A. Blast initiation and propagation of cylindrical detonations in MAPP-air mixtures. (AIAA J) 1703
Fuchs, Moshe and Felton, Lewis P. On a class of fully stressed trusses. (AIAA J, TN) 1597
Fuhs, Allen E. (PS, V. 34; see Margerum, Gordon W.)
——(AIAA J; see Biblarz, Oscar)
Fujimori, Yoshinori Shear and moment response of the airplane wing to nonstationary turbulence. (AIAA J, SYN) 1459
Fujita, Hajime and Kovasznay, Leslie S. G. Unsteady lift and radiated sound from a wake cutting airfoil. (AIAA J) 1216
Fulton, Robert E., Sobieszczanski, J., Storaasli, O., Landrum, Emma Jean, and Loendorf, D. Application of computer-aided aircraft design in a multidisciplinary environment. (JA, SYN) 369
Funk, G. (AIAA J; see Huang, N. C.)
Gabel, R. and Tarzanin, F., Jr. Blade torsional tuning to manage large amplitude control loads. (JA) 460
Galowin, L. S., Fletcher, L. S., and DeSantis, M. J. Investigation of laminar flow in a porous pipe with variable wall suction. (AIAA J) 1585
Ganz, Anthony A. and Serra, Raymond A. Boundary conditions and uniqueness in internal gas dynamic flows. (AIAA J, SYN) 263
Gaonkar, G. H. A study of lifting rotor flapping response peak distribution in atmospheric turbulence. (JA) 104
Garber, Vitalij Remotely piloted vehicles for the Army. (A/ A, Oct.) 46
Garcia, Frank, Jr. and Fowler, Wallace T. Thermal protection system weight minimization for the space shuttle through trajectory optimization. (JSR) 241
Garen, W., Synofzik, R., and Frohn, A. Shock tube for generating weak shock waves. (AIAA J, TN) 1132
Garrison, C. J. Hydrodynamics of large objects in the sea. Part I—Hydrodynamic analysis. (JH) 5
Garth, D. R. (PS, V. 33; see Herron, B. G.)
Geissler, W. Three-dimensional laminar boundary layer over a body of revolution at incidence and with separation. (AIAA J, TN) 1743
Gell, D. (AIAA J, TN; see Sherman, P. M.)
Gentry, Garl L. (AIAA J, TN; see Roper, Alan T.)
Gentry, Roy (AIAA J; see Vander Veen, Richard)
George, A. R. (JA; see Seebass, A. R.)
Georgeff, Michael P. Momentum integral method for viscous-inviscid interactions with arbitrary wall cooling. (AIAA J) 1393
——Extension of the momentum integral method to three-dimensional viscous-inviscid interactions. (AIAA J, TN) 1603
Gerber, Nathan and Bartos, Joan M. Strong spherical blast waves in a dust-laden gas. (AIAA J, TN) 120
Gerhart, Philip M. On prediction of separated boundary layers with pressure distribution specified. (AIAA J, TN) 1278
German, R. C., Robinson, C. E., High, M. D., and Lauer, R. F. Aircraft turbine engine emissions under simulated supersonic flight conditions. (JA) 472
Gersten, K. and Gross, J. F. Reply by author to A. Wortman. (AIAA J, TC) 574
Ghia, K. N. and Davis, R. T. A study of compressible potential and asymptotic viscous flows for corner region. (AIAA J) 355
——**and Davis, R. T.** A study of compressible potential and asymptotic viscous flows for corner region. (AIAA J, ERR) 1456
Ghia, U. and Davis, R. T. Navier-Stokes solutions for flow past a class of two-dimensional semi-infinite bodies. (AIAA J) 1659
Gianelli, M. J. (PS, V. 33; see McIntyre, J. E.)
Giesing, Joseph P. (JA, TC; see Rodden, William P.)
Gill, J. C. Advanced technology thrust vectoring exhaust systems. (JA) 764
Gilman, J., Jr. (JA; see Redd, L. T.)
Ginoux, Jean J. (AIAA J, TN; see Matthews, Richard D.)
Giri, J. (AIAA J, TN; see Rehfield, L. W.)
Glasgow, Edsel R. and Santman, Don M. Aft-end design techniques for twin-engine fighters. (JA) 39
Glasgow, E. R. Integrated airframe-nozzle performance for designing twin-engine fighters. (JA) 354
Glass, I. I., Chan, S. K., and Brode, H. L. Strong planar shock waves generated by explosively-driven spherical implosions. (AIAA J) 367
Glick, Robert L. On statistical analysis of composite solid propellant combustion. (AIAA J, TN) 384
Glickman, Roger A. (JSR; see Schuster, John R.)
Gold, Theodore Visual perception of pilots in carrier landing. (JA) 723
Golden, Dennis J. (JA; see Simpkins, Darrell)
Golden, J. O. (JSR; see Bain, R. L.)
Goldman, Robert L. Mode shapes and frequencies of clamped-clamped cylindrical shells. (AIAA J, TN) 1755
Goldschmied, Fabio R. (JH; see Parsons, Jerome S.)
Goldwasser, Samuel R. (AIAA J, SYN; see Saad, Michel A.)
Good, R. E. (AIAA J; see Rosenberg, N. W.)
Goodman, Theodore R. Reply by author to E. M. Murman and F. W. Steinle Jr. (JA, TC) 783
Goodmanson, Lloyd T. and Gratzer, Louis B. Recent advances in aerodynamics for transport aircraft. Part II. (A/ A, January) 52
Goodrich, Winston D. (JSR; see Bertin, John J.)
Goodson, Raymond E. (JH; see Parsons, Jerome S.)
Goodwin, M. A. (JSR; see Murtagh, T. B.)
Goody, Richard The Mars emerging from a generation of discoveries. (A/ A, January) 24
Goodykoontz, Jack H. (JA, SYN; see Reshotko, Meyer)
Goradia, Suresh H. and Lyman, Victor Laminar stall prediction and estimation of $C_{L_{max}}$. (JA) 528
Gorzynski, Carl S., Jr. and Maycock, J. Norman Explosives and pyrotechnic propellants for use in long-term deep space missions. (JSR, SYN) 211
Gosset, Bernard (AIAA J, SYN; see Padovan, Joseph)
Goto, Norihiro and Washizu, Kyuichiro On the dynamics of human pilots in marginally controllable systems. (AIAA J) 310
Gottlieb, R. G., Hull, D. G., and Fowler, W. T. Generalized perturbation method for solving two-point boundary-value problems. (AIAA J) 648
Graham, S. C., Grant, A. J., and Jones, J. M. Transient molecular concentration measurements in turbulent flows using Rayleigh light scattering. (AIAA J, TN) 1140
Graig, W. A. Comment on "Canadian advances in surface-piercing hydrofoils." (JH, TC) 74
Gran, Richard (JA; see Berman, Howard)
Grande, E. and Oates, G. C. Response of miniature pressure transducers to fluctuations in supersonic flow. (PS, V. 34) 3
Grant, A. J. (AIAA J, TN; see Graham, S. C.)
Grantham, W. J. (AIAA J, SYN; see Vincent, T. L.)
Gratzer, Louis B. (A/ A, January; see Goodmanson, Lloyd T.)
Gray, A. H. (JH, EN; see Connell, G. M.)
Greegor, R. (JA, EN; see Rosen, J. M.)
Green, Richard N. (JSR, SYN; see Harrison, Edwin F.)
Green, William D. Skylab II. Seeing the Sun in a different light. (A/ A, February) 36
Greenberg, E. (PS, V. 32; see Morgan, R. P.)
Greenberg, Joel S Risk analysis. (A/ A, Nov.) 48
Greenberg, J. S. and Hazelrigg, G. A., Jr. Methodology for reliability-cost-risk analysis of satellite networks. (JSR) 650
Greenberg, M. D. (JH; see Mitra, A.)
Greene, Bruce E. (JA; see Musgrove, Max D.)
Greene, George C. and Brink, Donald F. Method for producing a uniform, low Reynolds number jet. (JSR, EN) 604
Greenlee, J. E. (JSR; see Murtagh, T. B.)
Gregory, Thomas J., Bailey, Rodney O., and Nelms, Walter P. RPVs—Exploring civilian applications. (A/ A, Sept.) 38
Gregorwich, W. S. and Westerman, C. W. A near-isotropic microwave antenna for communications satellites. (PS, V. 33) 533
Grenleski, S. E. (PS, V. 34; see Orth, R. C.)
Grey, Jerry AIAA holds fuel-saving session. (A/ A, May) 52
——Future engines and fuel. (A/ A, Sept.) 14
Grose, William L. (JSR; see Evans, John S.)
Gross, J. F. (AIAA J, TC; see Gersten, K.)
Gross, Larry R. and Prussing, John E. Optimal multiple-impulse direct ascent fixed-time rendezvous. (AIAA J) 885

Gruver, W. A. and Engersbach, N. H. Nonlinear programing by projection-restoration applied to optimal geostationary satellite positioning. AIAA J) 1715

Guenther, R. A. (AIAA J, TN; see Ericsson, L. E.)

Gulati, S. T. and Dokmeci, M. C. Flexure of elastically supported axisymmetric shells. (AIAA J, TN) 1411

Guman, William J. and Williams, Thomas E. Pulsed plasma microthruster for synchronous meteorological satellite. (JSR, EN) 729

Gupta, A. K. and Sharma, S. C. Cambered Joukowsky airfoil in a nonuniform weak shear flow. (JA, EN) 653

Gupta, B. P. and Loewy, R. G. Theoretical analysis of the aerodynamic stability of multiple, interdigitated helical vortices. (AIAA J) 1381

Gustafson, Donald E. (AIAA J, SA; see Speyer, Jason L.)

Guy, T. B. A note on the shock standoff distance for a spherical body in supersonic flow. (AIAA J, TN) 380

Haberle, H. (PS, V. 33; see Eckhardt, G.)

Hacker, D. S. A simplified mixing length model of flame stability in swirling combustion. (AIAA J) 65

Hagedorn, Peter On the stability of equilibrium sets of discrete conservative mechanical systems. (AIAA J) 1057

Haglund, G. T. and Kane, E. J. Analysis of sonic boom flight test measurements near the shock wave extremity. (JA) 745

Hall, D. F. and Lyon, W. C. Low thrust propulsion system effects on communication satellites. (PS, V. 33) 279

Hall, G. Warren, Weingarten, Norman C., and Lockenour, Jerry L. Handling qualities effects on precision weapons delivery. (JA, SYN) 497

Hall, J. Gordon, Srinivasan, G., and Rathi, Jaipal S. Unsteady expansion waveforms generated by diaphragm rupture. (AIAA J, TN) 724

Hall, Morris F. (PS, V. 34; see Schwedland, Ronald P.)

Hallock, James N. (JA; see Brashears, M. R.)

Halsey, N. D. Methods for the design and analysis of jet-flapped airfoils. (JA) 540

Hamada, S. J. (PS, V. 33; see Duncan, J. W.)

Hamed, A. and Tabakoff, W. Some effects caused by solid particles in flows. (AIAA J, SYN) 581

Hankey, Wilbur L., Jr. (AIAA J; see Cooper, James R.)

Hanks, Richard W. and Ricks, Brad L. Laminar-turbulent transition in flow of pseudoplastic fluids with yield stresses. (JH) 163

Hansen, S. D. and McHarg, Q. D. Reliability and quality control of production engineering computer programs. (JA) 232

Hanson, Charles W. and Brown, John V. Attitude determination for the SKYNET and NATO synchronous communications satellites. (PS, V. 33) 127

Hanson, K. L. Results from tests of a large lightweight solar array unit. (PS, V. 33) 307

Harbour, P. J. (JSR; see Fearn, D. G.)

Hardison, Therman L. (JSR; see Childs, Dara W.)

Hardrath, Herbert F. Fracture mechanics. (JA, Dryden Research Lecture) 305

Hardy, H. D. Use of laser-powered optical proximity probe in advanced turbofan engine development. (PS, V. 34) 317

Harris, Gordon L. (A/ A, February; see Seemann, Gerald R.)

Harrison, Edwin F. (A/ A, February; see Pritchard, E. Brian)

Harrison, Edwin F. and Green, Richard N. Orbit analysis for coastal zone oceanography observations. (JSR, SYN) 131

Harrison, J. A. (AIAA J; see Mingori, D. L.)

Harrje, D. T. (AIAA J; see Abderhamid, A. N.)

Hart, Gary C. (AIAA J; see Collins, Jon D.)

——(AIAA J; see Hasselman, T. K.)

Hartley, Danny L. Application of laser Raman scattering to the study of turbulence. (AIAA J) 816

Hartzman, Mark Comparison of calculated static and dynamic collapse pressures for clamped spherical domes. (AIAA J, TN) 568

Harwell, W., Edelstein, F., McIntosh, R., and Ollendorf, S. Orbiting astronomical observatory heat pipe flight performance data. (PS, V. 35) 445

Harwit, Martin Infrared astronomy and the shuttle. (A/ A, Oct.) 23

Hassan, H. A. (AIAA J, SYN; see Smith, Neill S.)

Hasselman, T. K. (AIAA J; see Collins, Jon D.)

Hasselman, T. K. and Hart, Gary C. A minimization method for treating convergence in modal synthesis. (AIAA J) 316

Hastings, R. (JSR; see Fearn, D. G.)

Hatt, Fritz (AIAA J, ERR; see Barker, Richard M.)

Havener, Albert G. and Radley, Roger J., Jr. Turbulent boundary-layer flow separation measurements using holographic interferometry. (AIAA J) 1071

Haviland, R. P. Individual and thin-route communications by satellite. (PS, V. 32) 417

Hayden, Richard E. (JA; see Hersh, Alan S.)

Hayes, D. T., Herskovitz, S. B., Lennon, J. F., and Poirier, J. L. Electrostatic probe measurements of chemical injection effects during a re-entry flight test. (JSR) 388

Hazelrigg, G. A., Jr. (JSR; see Greenberg, J. S.)

Hazen, David Design for survival. (A/ A, February) 57

Hearn, H. C. and Young, D. L. Performance prediction model for a high-impulse monopropellant propulsion system. (JSR) 764

Heath, R. A. and Holland, W. B. Skylab experience with Apollo docking/ latching loads. (JSR) 107

Hebbar, K. S. (AIAA J, TN; see Murthy, A. V.)

Hedrick, J. Karl (JA; see Nichols, M. A.)

Hefner, Jerry N. Vortex-induced heating to a cone-cylinder body at Mach 6. (JSR, EN) 127

Hefner, Jerry N. and Cary, Aubrey M., Jr. Swept-slot film-cooling effectiveness in hypersonic turbulent flow. (JSR, EN) 351

Hefner, Jerry N. and Whitehead, Allan H., Jr. Vortex-induced heating to cone flaps at Mach 6. (JSR, EN) 200

Hegner, H. R. Engine condition monitor system to detect foreign object damage and crack development. (PS, V. 34) 531

Heidt, L. E. (AIAA J; see Ehhalt, D. H.)

Helliwell, William S. (AIAA J; see Lubard, Stephen C.)

Hempel, Peter R. High-speed computation of ascent trajectories within iterative loops using collocation methods. (AIAA J, SYN) 1467

Hender, Douglas R. (JSR; see Schuster, John R.)

——(JSR; see Masek, R. V.)

Henderson, H. LeRoy (JSR; see Luttrell Alvin L.)

Henry, Samuel (JA, SYN; see Roskam, Jan)

Henry, V. F., Whitworth, J. E., and Neham, E. A. Quantifying parameters influencing the spacing of geostationary satellites. (PS, V. 32) 309

Henschel, Frohmut, Plaetschke, Ermin, and Schulze, Hans-Kurt Minimum noise climbout trajectories of a VTOL aircraft. (JA, EN) 429

Heppe, R. R., Channel, L. E., and Cook, C. W. S-3A—A new dimension in airborne sea control. (JA) 577

Heppenheimer, T. A. Spaceborne very-long-baseline radio astronomy interferometry. (JSR, EN) 268

——Holographic structural control for large space reflectors and radio telescopes. (JSR, EN) 536

——Equations of motion for the perturbed restricted three-body problem. (AIAA J, TN) 1442

Hering, R. G. (PS, V. 35; see Smith, T. F.)

Hermance, C. E. Ignition analysis of adiabatic, homogeneous systems including reactant consumption. (AIAA J, ERR) 1008

Hermsen, R. W. (AIAA J, TN; see Dunlap, R.)

Herron, B. G., Barth, D. R., Finke, R. C., and Shumaker, H. A. Power processing systems for ion thrusters. (PS, V. 33) 261

Hersh, Alan S., Soderman, Paul T., and Hayden, Richard E. Investigation of acoustic effects of leading-edge serrations on airfoils. (JA) 197

Herskovitz, S. B. (JSR; see Hayes, D. T.)

Hiergeist, F., De Montlivault, J. L., and Payet, G. The Earth segment in the symphonie project. (PS, V. 32) 231

High, M. D. (AIAA J, TN; see Benek, J. A.)

——(JA; see German, R. C.)

Hildebrand, C. E. (JSR; see Ransford, G. A.)

Hill, Maynard L. and Hoppel, William A. Comment on "Wind effects on electrostatic autopilots." (JA, TC) 781

Hillard, M. E., Jr., Hunter, W. W., Jr., Meyers, J. F., and Feller, W. V. Simultaneous Raman and laser velocimeter measurements. (AIAA J, TN) 1445

Hillard, Mervin E., Jr., Morrisette, E. Leon, and Emory, M. Lawrence Raman scattering applied to hypersonic air flow. (AIAA J, TN) 1160

Hillard, Stanley E. Frequency determination from similarity considerations. (JA, EN) 651

Hillberry, B. M. (AIAA J; see Probst, E. P.)

Hintz, Gerald R. Orbit trim strategies for the 1975 Mars Viking mission. (JSR) 783

Hirata, Y., Kyogoku, M., and Isomura, E. A study on satellite communications for mobiles. (PS, V. 32) 249

Hitzl, Donald L. Computer illustrations of Earth satellite orbits. (JSR, EN) 346

Hodapp, Albert E., Jr. Effects of unsymmetrical stability derivative characteristics on re-entry vehicle trim angle behavior. (JSR) 300

——Effect of transverse products of inertia on re-entry vehicle trim angle behavior. (JSR, EN) 733

Hoffman, Joe D. (AIAA J; see Elsbernd, Arnold A.)

——(AIAA J, SYN; see Taylor, Allan A.)

——(AIAA J; see Vander Veen, Richard)

Hoffman, Joe D. and Maykut, A. R. Gas dynamic gain of supersonic thrust nozzles. (JSR) 697
Hoffman, M. A. (AIAA J; see Doss, E. D.)
Hojnacki, J. (PS, V. 34; see Matthews, B. J.)
Holcomb, L. B. and Lee, D. H. Survey of auxiliary-propulsion systems for communications satellites. (PS, V. 33) 191
Holdeman, James D. Dispersion and dilution of jet aircraft exhaust at high-altitude flight conditions. (JA) 483
Holland, W. B. (JSR; see Heath, R. A.)
Holmes, Leroy A. (JSR; see Lovrich, Thomas M.)
Holmes, R. E. (JA, EN; see Mays, J. A.)
Holster, Jesse L. and Astleford, William J. Analytical model for liquid rocket propellant feedline dynamics. (JSR) 180
Honecker, J. J., Jr. (JSR, EN; see Jenkins, R. B.)
Hong, Yong S. Base flow analysis for a dual-engine booster. (JSR, SYN) 209
Hooper, Richard M. (PS, V. 34; see Johnson Bruce V.)
Hoppel, William A. (JA, TC; see Hill, Maynard L.)
Horn, W., Barr, G., Carter, L., and Stearman, R. Recent contributions to experiments on cylindrical shell panel flutter. (AIAA J) 1481
Hornkohl, J. O. (PS, V. 34; see Lennert, A. E.)
Horstman, C. C. and Owen, F. K. New diagnostic technique for the study of turbulent boundary-layer separation. (AIAA J, TN) 1436
Horton, Harry P. Separating laminar boundary layers with prescribed wall shear. (AIAA J, TN) 1772
Horton, M. D. and Coates, R. L. T-Burners: Experiments compared with theory. (JSR, EN) 48
Howe, John T. Hydrogen ionization in the shock layer for entry into the outer planets. (AIAA J, TN) 875
Howell, John R. (PS, V. 35; see Sohal, Manohar S.)
Hsieh, B. J. (AIAA J; see Belytschko, Ted)
Hsin, Chen-Chung Arrested landing studies for STOL aircraft. (JA) 159
Hsu, T. R. and Bertels, A. W. M. Improved approximation of constitutive elasto-plastic stress-strain relationship for finite element analysis. (AIAA J, TN) 1450
Hua, Hsichun M. Reply by author to W. P. Rodden, J. P. Giesing, T. P. Kalman, and J. C. Rowan. (JA, TC) 367
Huang, N. C. and Funk, G. Inelastic buckling of a deep spherical shell subject to external pressure. (AIAA J) 914
Huang, S. N. and Alspaugh, D. W. Minimum weight sandwich beam design. (AIAA J, SYN) 1617
Huberman, M. N. and Rosen, S. G. Advanced high-thrust colloid sources. (JSR) 475
Hubert, Carl H. (JSR; see Alfriend, Kyle T.)
Huffman, G. David and Tramm, P. C. Airfoil design for high tip speed compressors. (JA) 682
Hugel, Helmut Flow rate limitations in the self-field accelerator. (AIAA J, SYN) 1461
Hughes, T. A. (PS, V. 35; see Schmitt, R. J.)
Hull, D. G. (AIAA J; see Gottlieb, R. G.)
Humbad, N. G. Comment on the equation for aeroelastic divergence of unguided launch vehicles. (AIAA J, TN) 1739
Huneidi, F. (JSR; see Niblock, G. A.)
Hunt, David A. Various aspects of the structural theory of liquids. (AIAA J) 1548
Hunt, James L., Jones, Robert A., and Midden, Raymond E. Simulation of real-gas effects for Mars entry. (JSR, EN) 62
Hunter, J. H. (PS, V. 35; see Hwangbo, H.)
Hunter, W. W., Jr. (AIAA J, TN; see Hillard, M. E., Jr.)
Huson, George (PS, V. 33; see Free, Bernard)
Hust, Jerome G. (AIAA J, SA; see Clark, Alan F.)
Hwangbo, H., Hunter, J. H., and Kelly, W. H. Analytical modeling of spacecraft with heat pipes and louvers. (PS, V. 35) 469
Hyde, J. R. (A/ A, Sept.; see Beckman, J. C.)
Hymas, C. E., Cavin, R. K., III, and Colunga, D. Reply by authors to L. J. Wood. (AIAA J, TC) 1454
Imber, Murray Temperature extrapolation mechanism for two-dimensional heat flow. (AIAA J) 1089
Inger, G. R. Supersonic laminar flow past a small rear-facing step. (AIAA J, SYN) 739
——Viscous effects in massively ablating planetary entry body flowfields. (JSR, EN) 540
——Supersonic laminar base pressure, heat-transfer, and upstream influence correlations for small steps. (AIAA J, TN) 1157
Inouye, Kenji and Tate, Atsushi Finite-difference version of quasi-linearization applied to boundary-layer equations. (AIAA J, TN) 558
Ishiguro, Tomiko Calculations of flow around a semi-infinite flat plate in a shock tube. (AIAA J, TN) 376
Isley, William C. and Duck, Kenneth I. Propulsion requirements for communications satellites. (PS, V. 33) 165
Isogai, Koji Lifting-surface theory for an oscillating T-Tail. (AIAA J) 28
Isomura, E. (PS, V. 32; see Hirata, Y.)
Iversen, James D. and Bernstein, Shmuel Trailing vortex effects on following aircraft. (JA, EN) 60
Jackson, J. P. and Nielsen, P. E. Role of radiative transport in the propagation of laser supported combustion waves. (AIAA J) 1498
Jackson, Robert W. (JSR; see Dyer, John W.)
Jackson, Roy P. Putting all our noise technology to work. (A/ A, January) 48
Jacobs, T. A. (AIAA J, SYN; see Shackleford, W. L.)
Jacobson, Ira D. Contribution of a wall shear stress to the Magnus effect on nose shapes. (AIAA J, TN) 1003
Jacobson, Robert A. and Powers, William F. Iterative explicit guidance for low thrust spaceflight. (JSR) 494
Jacobson, Robert A., McDanell, James P., and Rinker, George C. Terminal navigation analysis for the 1980 Comet Encke slow flyby mission. (JSR) 590
Jaffe, Leonard D. and Choate, Raoul Unmanned surface traverses of Mars and Moon: Science objectives, payloads, operations. (JSR, SYN) 353
Jaffe, N. A. (AIAA J; see Clark, K. J.)
Jahn, Robert G. (AIAA J; see Bruckner, Adam P.)
Jain, A. C. and Adimurthy, V. Hypersonic merged stagnation shock layers. Part I: Adiabatic wall case. (AIAA J) 342
——Hypersonic merged stagnation shock layers. Part II: Cold wall case. (AIAA J) 348
Jain, V. K. (AIAA J, TN; see Dhameja, R. K.)
Jakubowski, Antoni K. A wind-tunnel study of spinning conical disk decelerators at Mach 4. (JSR) 141
James, R. M. and Panico, V. D. Evaluation of drag integral using cubic splines. (JA, EN) 494
Janardan, B. A., Daniel, B. R., and Zinn, B. T. Damping of axial instabilities by small-scale nozzles under cold-flow conditions. (JSR) 812
Jannssen, Terry L. and Swaney, Thomas G. Shell instability analysis applied to a radome. (AIAA J, TN) 714
Jansson, B. (JH; see Almqvist, H.)
Jefferis, A. K. (PS, V. 33; see Withers, D. J.)
Jen, H. (JA, EN; see Bloom, A. M.)
Jenkins, R. B., Taylor, J. P., and Honecker, H. J., Jr. Development of the Astrobee F sounding rocket system. (JSR, EN) 56
Jensen, D. E. Comment on "Effects of nonequilibrium ablation chemistry on Viking radio blackout." (JSR, TC) 736
Jerath, N. (JSR; see Duxbury, T. C.)
Jerath, Navin and Ohtakay, Hiroshi Mariner IX optical navigation using Mars lit limb. (JSR) 505
Johns, D. J. (JSR; see Parthan, S.)
Johnsen, Gary W. (JSR; see Chapter, John J.)
Johnson, Bruce V., Marman, Henry V., Brent, John A., and Hooper, Richard M. Measurement of instantaneous air angle and total temperature fluctuations behind transonic compressor rotors. (PS, V. 34) 179
Johnson, C. P. (AIAA J, TC; see Oden, J. T.)
Johnson, D. A. Attitude stability of multibody symmetrical satellites with mechanical dampers. (JSR) 645
Johnson, Dennis A. Turbulence measurements in a Mach 2.9 boundary layer using laser velocimetry. (AIAA J, TN) 711
Johnson Donald W. Sounding rocket payload recovery systems. (JSR, EN) 424
Johnson, John A. Opportunities for U.S.-European cooperation in application satellite programs. (PS, V. 32) 47
Johnson, J. M., Jr. Digital filters using observers applied to ICBM control system design. (JSR) 498
Johnson, R. C. (PS, V. 34; see Krause, L. N.)
Johnson, R. L. and O'Keefe, J. D. Laser burnthrough time reduction due to tangential airflow—An interpolation formula. (AIAA J) 1106
Johnson, Walter A., Teper, Gary L., and Rediess, Herman A. Study of control system effectiveness in alleviating vortex wake upsets. (JA) 148
Johnson, W. Donald (AIAA J; see Williams, James C., III)
——(AIAA J, TN; see Williams James C., III)
Johnston, Sheridan C. Reply by author to U. H. Kurzweg. (AIAA J, TC) 416
Jolly, Alexander C. (JSR, SYN; see Pastrick, Harold L.)
Jones, B. A. On the determination of the internal aerodynamics of compressors. (PS, V. 34) 109
Jones, J. C. (JH; see Lavis, D. R.)
Jones, J. M. (AIAA J; see Graham, S. C.)
Jones R. and Mazumdar, J. A method of static analysis of shallow shells. (AIAA J, TN) 1134
Jones, Richard B. and Lutze, Frederick H., Jr. Computer simulation of near midair collisions in the terminal environment. (JA) 457

Jones, Robert A. (JSR, EN; see Hunt, James L.)
Jones, Robert A. and Richie, Christine B. Effect of wall temperature spatial variations on aerodynamic heating to an actively cooled aircraft. (JA, EN) 488
Jones, Robert E. (AIAA J; see Niedzwiecki, Richard W.)
Jones, Robert M. Stiffness of orthotropic materials and laminated fiber-reinforced composites. (AIAA J, TN) 112
Jones, Robert T. and Nisbet, James W. Transonic transport wings—Oblique or swept? (A/ A, January) 40
Kalb, H. T. (PS, V. 34; see Lennert, A. E.)
Kale, P. P., Nickelson, R. L., and Sarles, F. W., Jr. A design for INSAT. (PS, V. 32) 173
Kaloni, Purna N. and Smith, Raymond Penny-shaped crack in a linear viscoelastic medium under torsion. (AIAA J, TN) 1745
Kane, T. R. Spin stability of torque-free systems containing rotors. (AIAA J, TN) 720
Kalman, Terez P. (JA, TC; see Rodden, William P.)
Kane, E. J. (JA; see Haglund, G. T.)
Kang, Sang-Wook and Dunn, Michael G. Reply by authors to E. W. Miner and C. H. Lewis. (AIAA J, TC) 127
Kao, Hsiao C. Some aspects of airfoil stall in low-speed flow. (JA) 177
Kao, Tsai-tse and Elrod, Harold G., Jr. Laminar shear-stress pattern for nonsimilar incompressible boundary layers. (AIAA J) 1401
Kaplan, Marshall H. Active attitude and orbit control of body-oriented geostationary communications satellites. (PS, V. 33; 29
——(AIAA J; see Edwards, Terry L.)
Karamcheti, K. (AIAA J; see Woolley, James P.)
Kassal, Thomas T. Scattering properties of ice particles formed by release of H_2O in vacuum. (JSR, EN) 54
Kətz, Herbert Experiences in the design and application of turbine blade pyrometers. (PS, V. 34) 409
Kaufman, Howard (JA, SYN; see Bischoff, David)
Kayser, Lyle D. and Danberg, James E. Experimental study of separation from the base of a cone at supersonic speeds. AIAA J, TN) 1607
Keigler, J. E., Lindorfer, W. J., and Muhlfelder, L. Momentum wheel three-axis attitude control for synchronous communication satellites. (PS, V. 33) 141
Keith, Theo G., Jr. Subsonic flow into a downstream facing inlet. (JA, EN) 251
Kelley, James H. Hydrazine attitude-control propulsion: Evolution of a standardization program. (A/ A, June) 34
Kelly, J. G. (JH; see Sandman, B. E.)
Kelly, W. H. (PS, V. 35; see Hwangbo, H.)
Kemp, Nelson H. Lift and moment for arbitrary power-law upwash in oscillating subsonic unsteady thin-airfoil theory. (AIAA J, TN) 413
Kendall, B. M. (PS, V. 35; see Basiulis, E. A.)
Kenkare, A. S. (JSR, EN; see Lewis, J. G.)
Kennedy, Bruce (AIAA J; see Collins, Jon D.)
Kennedy, Lawrence A. (AIAA J; see Scaccia, Carl)
Kerslake, William R. and Finke, Robert C. SERT II hollow cathode multiple restarts in space. (JSR, EN) 669
Kerzner, Harold and Krier, Herman Finite-thickness diffusion flames over apyrolyzing fuel plate. (AIAA J, TN) 1155
Keshock, Edward G. Thermal conductivity measurements of porous materials in several gaseous environments. (JSR) 41
Kiesling, J. D. (PS, V. 32; see Podraczky, E.)
Kilgore, R. A. (A/ A, Oct.; see Polhamus, E. C.)
Kilgore, Robert A., Adcock, Jerry B., and Ray, Edward J. Flight simulation characteristics of the Langley high Reynolds number cryogenic transonic tunnel. (JA) 593
Kim, H. W. (AIAA J, SYN; see Yang, T. Y.)
Kimble, K. R., Liu, D. D., Ruo, S. Y., and Wu, J. M. Unsteady transonic flow analysis for low aspect ration, pointed wings. (AIAA J) 516
King, Joseph H. Solar proton fluences for 1977-1983 space missions. (JSR) 401
King, Wilton W. (AIAA J, TN; see Morgan, Joseph D., III)
King, Wilton W. and Lin, Chien-Chang Applications of Bolotin's method to vibrations of plates. (AIAA J, TN) 399
Kinney, Robert B. (AIAA J; see Schmall, Robert A.)
Kirchhoff, R. H. and Burbank, R. A. Response of a hot wire oscillating in a shear flow. (AIAA J, TN) 96
Kirchhoff, R. H. and Safarik, R. R. Turbulence calibration of a hot wire anemometer. (AIAA J, TN) 710
Kirkpatrick, J. P. and Brennan, P. J. Advanced thermal control flight experiment. (PS, V. 35) 409
Kirlin, William F. (A/ A, Sept.; see Kresa, Kent)
Kirszenblat, Albert Determination of allowable tolerances for asymmetries of a free rolling missile. (JSR) 295
Kirszenblat, A. and Chetrit, M. Least squares nonlinear parameter estimation by the iterative continuation method. (AIAA J, TN) 1751
Kishore, K. (AIAA J, SYN; see Rastogi, R. P.)
——(AIAA J, TN; see Rastogi, R. P.)
——(AIAA J; see Rastogi, R. P.)
Kitchens, Clarence W., Jr. Calculation of low Reynolds number flow past a square protuberance. (AIAA J, TN) 1005
Kitscha, W. W. (PS, V. 35; see Yovanovich, M. Michael)
Kleinbub, D. L. (JSR, SYN; see Liang, A. C.)
Klunker, E. B. and Newman, P. A. Computation of transonic flow about lifting wing-cylinder combinations. (JA, EN) 254
Knopow, J. J. Next generation communications satellites. (PS, V. 32) 63
Kobayashi, Ryoji Taylor-Gortler instability of a boundary layer with suction or blowing. (AIAA J, TN) 394
Kochevar, Henry J. Measurements of Earth station antennas G/ T ratio by radio stars and satellites. (PS, V. 33) 359
Koenig, Walter A. (PS, V. 32; see Blachier, Bruno)
Kohlman, David L. and Brainerd, Carl H. Evaluation of spoilers for light aircraft flight path control. (JA) 449
Kohnecke, B. (JSR; see Rex, D.)
Kollrack, Reiner (AIAA J; see Aceto, Leonard D.)
Koosinlin, M. L. and Lockwood, F. C. The prediction of axisymmetric turbulent swirling boundary layers. (AIAA J) 547
Korn, James A. Compressor distortion estimates using parallel compressor theory and stall delay. (JA, EN) 584
Kosakoski, R. A. and Collins, D. J. Application of holographic interferometry to density field determination in transonic corner flow. (AIAA J) 767
Kosson, R. L. (PS, V. 35; see Dominguez, P. J.)
Kovasznay, Leslie S. G. (AIAA J; see Fujita, Hajime)
Krause, L. N., Dudzinski, T. J., and Johnson, R. C. Total pressure averaging in pulsating flows. (PS, V. 34) 193
Kresa, Kent and Kirlin, William F. Mini-RPVs: Big potential, small cost. (A/ A, Sept.) 48
Krider, E. P., Noggle, R. C., Uman, M. A., and Orville, R. E. Lightning and the Apollo 17/ Saturn V exhaust plume. (JSR) 72
Krier, Herman (AIAA J, TN; see Kerzner, Harold)
Krishnamoorthy, G. Buckling of thin cylinder under combined external pressure and axial compression. (JA) 65
——Buckling of open cylindrical shells with torsionally stiff rectangular edge stiffeners. (AIAA J) 1348
Krishnamurthy, V. and Subramanian, N. R. Potential flow past annular aerofoils. (JA, EN) 712
Krupp, James A. (AIAA J; see Collins, Donald J.)
Kryvoruka, John K. (JSR, SYN; see Phillips, Robert W.)
Kryvoruka, John K. and Ashurst, William T. Aerodynamic and flight dynamic analysis of finned re-entry vehicles. (JSR) 135
Kubota, N., Ohlemiller, T. J., Caveny, L. H., and Summerfield, M. Site and mode of action of platonizers in double base propellants. (AIAA J) 1709
Kuhar, Edward J. and Stahle, Clyde V. Dynamic transformation method for modal synthesis. (AIAA J) 672
Kuhn, Gary D. and Nielsen, Jack N. Prediction of turbulent separated boundary layers. (AIAA J, SYN) 881
Kulla, D. (JA; see Coe, Paul L., Jr.)
Kumar, K. (AIAA J, TN; see Modi, V. J.)
Kumar, Rajnish and Ahmed, Shabeer Analysis of thickness tapered booms for space applications. (JSR, EN) 125
Kuo, B. C., Seltzer, S. M., Singh, G., and Yackel, R. A. Design of a digital controller for spinning flexible spacecraft. (JSR) 584
Kuo, Ching-Chiang (AIAA J; see Morino, Luigi)
Kuo, K. K. and Summerfield, M. Theory of steady-state burning of gas-permeable propellants. (AIAA J) 49
Kurfess, James D. Superpressure balloons for long-duration flight. (A/ A, April) 68
Kurtz, Helmut L. (JSR; see Di Capua, Marco S.)
Kurzweg, Ulrich H. Comment on "Stability of rotating stratified fluids." (AIAA J, TC) 415
Kusomoto, Keiichi, Yoshikawa, Takao, and Murasaki, Toshimitsu Ion current collection by cylindrical electrostatic probe in a flowing plasma. (AIAA J, TN) 726
Kutler, Paul Supersonic flow in the corner formed by two intersecting wedges. (AIAA J, SYN) 577
Kutschenreuter, P. H., Jr., Collins, T. P., and Vier, W. F., III P3G—A new dynamic distortion generator. (JA) 344
Kwok, Munson A. (AIAA J; see Varwig, Robert L.)
Kyogoku, M. (PS, V. 32; see Hirata, Y.)
Lai, R. Y. S. (AIAA J, TN; see Sun, C. T.)
Laitone, E. V. and Lin, Wen-Fan Effect of thrust on the longitudinal oscillations of missiles. (JSR, EN) 121
Lakshmikantham, C. and Tsui, Tien-Yu Dynamic stability of axially-

stiffened imperfect cylindrical shells under axial step loading. (AIAA J) 163
——(AIAA J; see Wan, F. Y. M.)
Lakshminarayana, B. (JA; see Robbins, B.)
Lam, T. T. (PS, V. 35; see Armaly, B. F.)
Lan, C. Edward Quasi-vortex-lattice method in thin wing theory. (JA) 518
——Some characteristics of airfoil-jet interaction with Mach number nonuniformity. (JA, EN) 491
Landrault, C. (JSR; see Costes, A.)
Landrum, Emma Jean (JA, SYN; see Fulton, Robert E.)
Landweber, L. Axisymmetric potential flow in a circular tube. (JH) 137
Larson, Victor Suboptimal controller for a linearized η-body spacecraft. (JSR, EN) 858
Lastman, G. J. Transformation for the numerical integration of systems of the form $\dot{X}(t)=F[X(t)]$. (AIAA J, TN) 1430
Lau, R. A. (JSR; see Moog, R. D.)
Lauchle, Gerald C. Dynamic hinge moment of a low aspect ratio control surface. (JH, EN) 119
Laudadio, John F. Prediction of pressure fluctuation in sounding rockets and manifolded recovery systems. (JSR, EN) 119
Lauer, R. F. (JA; see German, R. C.)
LaVean, Gilbert E. and Martin, Edward J. Communication satellites: The second decade. (A/ A, April) 54
Lavis, D. R., Bartholomew, R. J., and Jones, J. C. Response of air cushion vehicles to random seaways and the inherent distortion in scale models. (JH) 83
Law, C. Herbert Supersonic, turbulent boundary-layer separation. (AIAA J) 794
Law, C. K. Surface reaction model for metal particle combustion. (AIAA J, TN) 1612
Laws, G. T. (AIAA J; see Walkden, F.)
Lebsock, K. L., Flanders, H. R., and Rodden, J. J. Simulation and testing of a double-gimballed momentum wheel stabilization system for communication satellites. (JSR) 395
Ledder, H. J. (JA; see Boothe, E. M.)
Lederman, S. (AIAA J, TN; see Avidor, J. M.)
Lederman, S. and Bornstein, J. Application of Raman effect to flowfield diagnostics. (PS, V. 34) 283
Lee, D. H. (PS, V. 33; see Holcomb, L. B.)
Lee, L. H. N. Inelastic asymmetric buckling of ring-stiffened cylindrical shells under external pressure. (AIAA J) 1051
Lee, Patrick H. W. (AIAA J; see Wu, James H. T.)
Lee, Wilfred E. (PS, V. 33; see Cuccia, C. Louis)
Leech, John W. (AIAA J; see Morino, Luigi)
Lefferdo, James M. (AIAA J, TN; see Rao, Prabhakara P.)
Leiby, David W. A systems engineering approach to effective engine condition monitoring. (PS, V. 34) 481
Lemley, C. E. and Mullans, R. E. Transonic wind-tunnel and flight buffet pressures on a swept wing. (JA) 173
Lemmon, E. Clark (JSR; see Coleman, Hugh W.)
Lengrand, Jean-Claude and Cloupeau, Michel Application of Smith's model to rotational temperature measurements in nitrogen. (AIAA J) 812
Lennert, A. E., Hornkohl, J. O., and Kalb, H. T. Application of laser velocimeters for flow measurements. (PS, V. 34) 77
Lennon, J. F. (JSR; see Hayes, D. T.)
Leonard, John W. (PS, V. 34; see Margerum, Gordon W.)
Leong, R. K. Linear spatial stability of the plane Poiseuille flow. (AIAA J, TN) 1605
Lesco, Daniel J. (PS, V. 34; see Buchele, Donald R.)
Lesco, Daniel J., Sturman, John C., and Nieberding, William C. On-the-shaft data systems for rotating engine components. (PS, V. 34) 131
Levine, Andrew S. (AIAA J, SYN; see Otterman, Bernard)
Levy, S. A., Zinkham, R. E., and Spangler, G. E. X2048, a high strength, high toughness aluminum alloy for aircraft applications. (JA) 202
Lewellen, W. S., Teske, M., and duP. Donaldson, Coleman Application of turbulence model equations to axisymmetric wakes. (AIAA J) 620
Lewis, Clark H. (AIAA J, TC; see Miner, E. W.)
Lewis, J. G., and Kenkare, A. S. Assessment of an active thermal control louvre array for spacecraft. (JSR, EN) 342
Lewis, J. W. L. (AIAA J, TN; see Whitfield, D. L.)
Lezius, Dietrich K. Water tank study of the decay of trailing vortices. (AIAA J) 1065
Lhuillier, J. N. (JSR; see Barrere, M.)
Li, C. P. Recent developments on time-dependent calculation of nonequilibrium flows. (JSR, EN) 123
Liang, A. C. and Kleinbub, D. L. Drift compensation and acceleration resolution for a rotating platform IMU. (JSR, SYN) 547
Libai, A. (AIAA J; see Durban, D.)
Libby, Paul A. Wall shear at a three-dimensional stagnation point with a moving wall. (AIAA J, TN) 408
Liber, T. (AIAA J; see Rowlands, R. E.)
Liddle, Sidney G. Integral relations method computations of annular and asymmetric plane nozzle flowfields. (JSR) 146
Liden, Sam P. Precision CMG control for high-accuracy pointing. (JSR) 236
Liebing, L. and Seidel, F. Low current pulsed ablation plasma thruster. (JSR, SYN) 609
Liegeois, Alain (JSR, EN; see Amieux, Jean Claude)
Liepmann, H. W. (AIAA J, TN; see Barker, S. J.)
Lilley, David G. Turbulent swirling flame prediction. (AIAA J) 219
Lin, Chien-Chang (AIAA J, TN; see King, Wilton W.)
Lin, J. T. Outgas dominated pressure distribution in a multilayer insulation system. (AIAA J) 1590
Lin, T. C. and Rubin, S. G. Viscous flow over spinning cones at angle of attack. (AIAA J) 975
Lin, Wen-Fan (JSR, EN; see Laitone, E. V.)
Lindorfer, W. J. (PS, V. 33; see Keigler, J. E.)
Lindsay, G. H. (JSR; see Francis, E. C.)
Linford, R. M. F. (PS, V. 35; see Schmitt, R. J.)
Lippisch, Alexander M. Comment on "Ram wing surface effect boat." (JH, TC) 76
Lissaman, P. B. S. Analysis of high-aspect ratio jet-flap wings of arbitrary geometry. (JA) 259
Liu, A. F. (JA; see Ekvall, J. C.)
Liu, Alan Fong-Ching Crack growth and failure of aluminum plate under in-plane shear. (AIAA J) 180
Liu, D. D. (AIAA J; see Kimble, K. R.)
Liu, Frank C. Coupled librational motions of a gyrostat satellite. (JSR) 230
Liu, J. J. Satellite motion about an oblate earth. (AIAA J) 1511
Lobitz, Donald W. (AIAA J; see Nayfeh, Ali H.)
Lockenour, Jerry L. (JA, SYN; see Hall, G. Warren)
Lockwood, F. C. (AIAA J; see Koosinlin, M. L.)
Loeb, Horst W. Electric propulsion technology status and development plans—European programs. (JSR) 821
Loendorf, D. (JA, SYN; see Fulton, Robert E.)
Loewy, R. G. (AIAA J; see Gupta, B. P.)
Loftin, Laurence K., Jr. Toward a second-generation supersonic transport. (JA) 3
Lohfeld, R. E., Anand, D. K., and Whisnant, J. M. Pitch axis stabilization in eccentric orbits using a variable-speed rotor. (JSR, EN) 430
Longstrezt, C. S. (PS, V. 34; see Small, L. L.)
Look, D. C. Analysis of thermal radiation bidirectionally reflected from roughened brass. (AIAA J) 656
Louis, J. F., Demirjian, A. M., and Topping, R. F. Heat transfer measurements in turbines. (PS, V. 34) 333
Love, William J. Prediction of pressure drop in straight vortex tubes. (AIAA J) 959
Lovelace, Alan M. Advanced composites. (JA, 11th von Karman Lecture) 501
Lovrich, Thomas M., Schwartz, Sidney H., and Holmes, Leroy A. Flow visualization of thermal stratification with localized heat sources. (JSR) 664
Lubard, Stephen C. and Helliwell, William S. Calculation of the flow on a cone at high angle of attack. (AIAA J) 965
Ludewig, Hans, Manning, A. James, and Raseman, Chad J. Feasibility of rotating fluidized bed reactor for rocket propulsion. (JSR) 65
Luthra, V. K. (AIAA J; see Afzal, Noor)
Luttrell, Alvin L. and Henderson, H. LeRoy Pressure vessel certification based on fracture mechanics technology. (JSR) 838
Lutze, Frederick H., Jr. (JA; see Jones, Richard B.)
Lyman, Victor (JA; see Goradia, Suresh H.)
Lyon, W. C. (PS, V. 33; see Hall, D. F.)
Lyons, M. G. and DeBra, D. B. A reduced state estimator for orbital heading reference. (JSR) 97
MacLellan, D. C. Anticipated developments in communications satellite technology. (PS, V. 32) 145
Maddalon, Dal V. Rating aircraft on energy. (A/ A, Dec.) 26
Maddox, S. A. (JA, EN; see Mook, D. T.)
Mager, Artur Steady, incompressible, swirling jets and wakes. (AIAA J) 1540
Maiersperger, Walter P. Zeppelins? Not again! (A/ A, February) 28
Maisenhalder, F. and Mayerhofer, W. Jet-diagnostics of a self-field accelerator with Langmuir probes. (AIAA J) 1203
Majumder, D. K. (AIAA J, TN; see Thornton, W. A.)
Malkin, M. S. Space shuttle/ The new baseline. (A/ A, January) 62
Mamada, Hiroshi and Ando, Shigenori Minimum induced drag of semi-

elliptic ground effect wing. (JA, SYN) 257
Mandal, Satyanarayan Crack in a thin infinite plate of viscoelastic medium. (AIAA J, TN) 233
Mann, Ronald L. and Perkins, Richard W. Buckling behavior of a composite beam column. (AIAA J, TN) 872
Manning, A. James (JSR; see Ludewig, Hans)
Mantz, Arlan W. (PS, V. 35; see Thompson, Samuel B.)
Marcillat, Jacques Surface flowfield induced by the turbulent boundary layer on a yawed cone. (AIAA J, TN) 1164
Maresca, Christian, Favier, Daniel, and Rebont, Jean Instantaneous velocity measurements in the near wake of a helicopter rotor. (AIAA J, TN) 1165
Margerum, Gordon W., Leonard, John W., and Fuhs, Allen E. Fiber optic and laser digital pressure transducers. (PS, V. 34) 217
Marksон, Ralph Practical aspects of electrostatic stabilization. (A/ A, April) 44
Marman, Henry V. (PS, V. 34; see Johnson, Bruce V.)
Marsh, Elbert L. Attitude control of solar electric spacecraft by thruster gimballing. (JSR, SYN) 737
——Attitude stability of a flexible solar electric spacecraft: A parametric study. (JSR) 89
Marshall, Larry R. (JH; see Mook, Dean T.)
——(JH; see Nayfeh, Ali H.)
Martin, Edward J. A/ A, April; see LaVean, Gilbert E.)
Martin, James A. Optimal payload ascent trajectories of winged vehicles. (JSR, EN) 860
Martindale, W. R. (JSR; see Adams, J. C., Jr.)
——(JSR; see Bertin, John J.)
Martorana, R. T. (PS, V. 35; see Vachon, W. A.)
Masek, R. V., Hender, D., and Forney, J. A. Evaluation of aerodynamic heating uncertainties for space shuttle. (JSR) 368
Matthews, B. J., Wuerker, R. F., Chambers, H. F., Jr., and Hojnacki, J. Holography of JP-4 droplets and combusting boron particles. (PS, V. 34) 297
Matthews, Richard D. and Ginoux, Jean J. Correlation of peak heating in the reattachment region of separated flows. (AIAA J, TN) 397
Matuszewski, John P. (JSR, EN; see Asher, Robert B.)
Mau, S. T. and Tong, P. Calculation of mechanical impedance by finite element hybrid model. (AIAA J, TN) 249
Maxwell, Barry R. Particle flow in turbomachinery with application to laser-Doppler velocimetry. (AIAA J, SYN) 1297
Maycock, J. Norman (JSR, WYN; see Gorzynski, Carl S., Jr.)
Mayerhofer, W. (AIAA J; see Maisenhalder, F.)
Maykut, A. R. (JSR; see Hoffman, Joe D.)
Mayne, R. W. (JSR, SYN; see Afimiwala, K. A.)
Mays, J. A. and Holmes, R. E. An optimized video output from a wide angle optical probe. (JA, EN) 124
Mazumdar, J. (AIAA J, TN; see Jones, R.)
McClendon, Ronald W. (AIAA J; see Murphree, David L.)
McColgan, Charles J. (AIAA J, TN; see McLaughlin, Dennis K.)
McCormick, Michael E. Analysis of a wave energy conversion buoy. (JH) 77
McCrory, W. W. Thermal protection for divers. (JH) 115
McCune, James E. (AIAA J; see Okuronmu, Olufemi)
McCutchen, C. W. Comment on "Bone articulations as systems of poroelastic bodies." (AIAA J, TC) 256
McDanell, James P. (JSR; see Jacobson, Robert A.)
McElroy, Michael B. (JSR; see Noll, Richard B.)
McGregor, R. C. (JH, EN; see Swales, P. D.)
McHarg, Q. D. (JA; see Hansen, S. D.)
McIntosh, R. (PS, V. 35; see Harwell, W.)
McIntyre, J. E. and Gianelli, M. J. Effect of an autotracking antenna on the nutational stability of a dual-spin spacecraft. (PS, V. 33) 85
McInville, Roy M. (AIAA J, SYN; see Smith, Neill S.)
McLaughlin, Dennis K. and McColgan, Charles J. Hot-wire measurements in a supersonic jet at low Reynolds numbers. (AIAA J, TN) 1279
McLean, J. D. (AIAA J; see Dowell, E. H.)
McLean, W. J. (AIAA J; see Anderson, L. B.)
McManus, Neil P. (AIAA J, TN; see Schmitz, Peter D.)
McMaster, John R. and Schenk, Frederick L. Development of the F-12 aircraft flight control system. (JA) 225
McMillan, J. D. (AIAA J, SYN; see Schutz, B. E.)
McNary, Charles A. (JA; see Balser, Martin)
McVey, D. F. and Wolf, D. F. Analysis of deployment and inflation of large ribbon parachutes. (JA) 96
Meese, R. A. and Skifstad, J. G. Ignition and global combustion models for clouds of boron particles. (AIAA J) 71
Meetin, Ronald J. and Seifert, Howard S. Propulsion dynamics of lunar hoppers. (JSR) 852
Mehra, Raman K., Stepner, David E., and Tyler, James S. Maximum likelihood identification of aircraft stability and control derivatives. (JA) 81
Meirick, R. P. (JSR; see Tewell, J. R.)
Meirovitch, Leonard Liapunov stability analysis of hybrid dynamical systems in the neighborhood of nontrivial equilibrium. (AIAA J) 889
——A new method of solution of the eigenvalue problem for gyroscopic systems. (AIAA J) 1337
——Bounds on the extension of antennas for stable spinning satellites. (JSR, EN) 202
Menichelli, V. J. (JSR; see Rosenthal, L. A.)
Mercanti, Enrico P. Widening ERTS applications. (A/ A, May) 28
Meredith, C. O. Lessons learned from INTELSAT III satellite program. (PS, V. 32) 3
Merritt, Gordon E. Wake growth and collapse in stratified flow. (AIAA J) 940
Mertaugh, L. J. (AIAA J, TN; see Warsi, Z. U. A.)
Merz, A. W. The homicidal chauffeur. (AIAA J, SYN) 259
Messner, A. M., Taylor G. Q., and Price, C. F. Interdisciplinary computer analyses of three-dimensional solids defined by polyhedral surfaces. (JSR, EN) 52
Meyer, J. W. (AIAA J; see Anderson, L. B.)
Meyers, J. F. (AIAA J, TN; see Hillard, M. E., Jr.)
Midden, Raymond E. (JSR, EN; see Hunt, James L.)
Mihlfeith, C. M. and Sayer, L. H. Novel high area ratio T-burner for characterizing metalized propellants. (JSR) 574
Millard, John P. and Pearson, B. Douglas, Jr. Optical stability of coatings exposed to four years space environment on OSO-III. (PS, V. 35) 249
Miller, Charles G. Flow properties in expansion tube with helium, argon, air, and CO_2 flows. (AIAA J, TN) 564
Miller, Charles G. and Moore, John A. Shock shapes of blunt bodies in hypersonic helium, air, and CO_2 flows. (AIAA J, TN) 411
Miller, Gabriel (AIAA J, TN; see Baronti, Paolo)
Miller, R. G. (PS, V. 35; see Fletcher, L. S.)
Miller, R. G. and Fletcher, L. S. Thermal conductance of porous metallic materials in a vacuum environment. (PS, V. 35) 321
Mills, A. F. (JSR; see Wassel, A. T.)
Miner, E. W. and Lewis, Clark H. Comment on "Hypersonic, viscous shock layer with chemical nonequilibrium for spherically blunted cones." (AIAA J, TC) 124
Mingori, D. L. and Harrison, J. A. Circularly constrained particle motion in spinning and coning bodies. (AIAA J) 1553
Minkowski, J. M. (AIAA J, TN; see Singer, A.)
Mirza, Shaukat and Singh, Anand V. Axisymmetric vibration of circular sandwich plates. (AIAA J, TN) 1418
Mitani, Tohru (AIAA J, TN; see Nioka, Takashi)
Mitchell, C. E. (AIAA J; see Baer, M. R.)
Mitchell, William Simulation of a ground facility for testing ramjets under flight conditions. (JSR, SYN) 449
Mitra, A. and Greenberg, M. D. Effect of a wavy bottom on Kelvin-Helmholtz instability. (JH) 53
Miyazawa, M. (AIAA J, TN; see Zakkay, V.)
Modi, V. J. Attitude dynamics of satellites with flexible appendages—A brief review. (JSR, SA) 743
——(JSR, EN; see Pande, K. C.)
Modi, V. J. and Kumar, K. Periodic solutions of gravity oriented axisymmetric systems. (AIAA J, TN) 225
Modi, V. J. and Pande, K. C. Magnetic-solar hybrid attitude control of satellites in near-equatorial orbits. (JSR) 845
Moffat, Robert J. (AIAA J, TN; see Pimenta, Marcos)
Mohling, R. A. (AIAA J, SYN; see Tannehill, J. C.)
Molitor, J. H. Ion propulsion flight experience, life tests, and reliability estimates. (JSR) 677
Monsler, M. J. (AIAA J; see Pirri, A. N.)
Montgomery, Leslie D. Analytic model for assessing the thermal performance of scuba divers. (JH) 108
Montoya, Earl J. (PS, V. 34; see Schweikhard, William J.)
Moog, R. D., Bendura, R. J., Timmons, J. D., and Lau, R. A. Qualification flight tests of the Viking decelerator system. (JSR) 188
Mook, Dean T. (AIAA J; see Nayfeh, Ali H.)
——(JH; see Nayfeh, Ali H.)
Mook, Dean T. and Maddox, S. A. Extension of a vortex-lattice method to include the effects of leading-edge separation. (JA, EN) 127
Mook, Dean T., Marshall, Larry R., and Nayfeh, Ali H. Subharmonic and superharmonic resonances in the pitch and roll modes of ship motions. (JH) 32
Moore, Jesse W. (A/ A, February; see Pritchard, E. Brian)
Moore, John A. (AIAA J, TN; see Miller, Charles G.)
Morel, Thomas and Torda, T. Paul Calculation of free turbulent mixing

by the interaction approach. (AIAA J) 533
Morgan, Joseph D., III, Anderson, Jerry M., and King, Wilton W. Elastodynamics of cracked structures using finite elements. (AIAA J, TN) 1767
Morgan, R. P., Singh, J. P., Anderson, B. D., and Greenberg, E. Satellites for U.S. education: Needs, opportunities, and systems. (PS, V. 32) 441
Morino, Luigi and Kuo, Ching-Chiang Subsonic potential aerodynamics for complex configurations: A general theory. (AIAA J) 191
Morino, Luigi, Leech, John W., and Witmer, Emmett A. Optimal predictor-corrector method for systems of second-order differential equations. (AIAA J) 1343
Morrisette, E. Leon (AIAA J, TN; see Hillard, Mervin E., Jr.)
Mowlem, A. Robin and Smith, Russell A. Analysis of compressible turbulent flow over a yawed cone. AIAA J, SYN) 1171
Moya, F. (AIAA J; see Regnier, P. R.)
Muhlfelder, L. (PS, V. 33; see Keigler, J. E.)
Mukunda, H. S. and Raghunandan, B. N. Burning constant-stoichiometric ratio relation—some clarifications. (AIAA J, TN) 1429
Mullans, R. E. (JA; see Lemley, C. E.)
Munjal, N. L. and Parvatiyar, M. G. Ignition of hybrid rocket fuels with fuming nitric acid as oxidant. (JSR, EN) 428
Murasaki, Toshimitsu (AIAA J, TN; see Kusumoto, Keiichi)
Murdoch, Peter Low order observer for a linear functional of the state vector. (AIAA J, TN) 1288
——Transfer function synthesis by state vector feedback. (AIAA J, TN) 1765
Murman, Earll M. Analysis of embedded shock waves calculated by relaxation methods. (AIAA J) 626
——Reply by author to T. C. Tai. (AIAA J, TC) 736
Murman, Earll M. and Steinle, Frank W., Jr. Comment on "A criterion for assessing wind-tunnel wall interference at Mach 1." (JA, TC) 782
Murphree, David L., Carter, Richard P., and Smith, Dennis R. Laser absorption and gain by Ar^+-ion states in a supersonic expansion. (AIAA J, TN) 1732
Murphree, David L., Taylor, Clayborne D., and McClendon, Ronald W. Mathematical modeling for the detection of fish by an airborne laser. (AIAA J) 1686
Murphy, Andrew J. (JSR; see Wool, Mitchell R.)
Murphy, J. D. (AIAA J, TN; see Rubesin, M. W.)
Murphy, J. L. and Netzer, D. W. Ammonium perchlorate and ammonium perchlorate—binder sandwich combustion. (AIAA J, SYN) 13
Murray, J. A. Chamber bleed auxiliary power unit. (JSR) 808
Murtagh, T. B., Whitsett, C. E., Goodwin, M. A., and Greenlee, J. E. Automatic control of the Skylab Astronaut Maneuvering Research Vehicle. (JSR) 321
Murthy, A. V. Hypersonic flow over blunted slender wedges. (JA, EN) 249
Murthy, A. V. and Hebbar, K. S. Calculation of laminar boundary layers on continuous surfaces by Meksyn's method. (AIAA J, TN) 732
Murthy, M. V. Krishna (JSR, EN; see Srinivasan, K.)
Musgrove, Max D., Greene, Bruce E., Shideler, John L., and Bohon, Herman L. Advanced beaded and tubular structural panels. (JA) 68
Myers, M. K. (AIAA J; see Zahalak, G. I.)
Na, T. Y. Comment on "unsteady boundary-layer flow of power law fluids." (AIAA J, TC) 1775
Nadaud, L. (JSR; see Barrere, M.)
Nagy, Arthur E. (JA; see Balser, Martin)
Nagy, A. F. (AIAA J, TN; see Stolarski, R. S.)
Nakamura, Takashi and Riedmuller, Wolfgang Stability of nonequilibrium MHD plasma in the regime of fully ionized seed. (AIAA J) 661 J) 661
Nakamura, Yoshiya (JA; see Azuma, Akira)
Nakanishi, S. and Finke, R. C. 9700-hour durability test of a five centimeter diameter ion thruster. (JSR) 560
Nakayama, A. and Patel, V. C. Calculation of the viscous resistance of bodies of revolution. (JH) 154
Narayanaswami, R. Dependence of plate-bending finite element deflections and eigenvalues on Posson's ratio. (AIAA J, TN) 1420
——New triangular plate-bending finite element with transverse shear flexibility. (AIAA J, TN) 1761
Narayanaswami, R. and Adelman, H. M. Inclusion of transverse shear deformation in finite element displacement formulations. (AIAA J, TN) 1613
Nardo, C. T. (AIAA J; see Clark, K. J.)
Nash, John F. (AIAA J; see Singleton, Robert E.)
Nath, G. Reply by author to W. J. Franks. (AIAA J, TC) 1456
Nathanson, D. (PS, V. 35; see Vachon, W. A.)
Nayfeh, Ali H. (JH; see Mook, Dean T.)
Nayfeh, Ali H., Mook, Dean T., and Lobitz, Donald W. Numerical-perturbation method for the nonlinear analysis of structural vibrations. (AIAA J) 1222
Nayfeh, Ali H., Mook, Dean T., and Marshall, Larry R. Perturbation-energy approach for the development of the nonlinear equations of ship motion. (JH) 130
Nayfeh, Ali H., Sun, John, and Telionis, Demetri P. Effect of bulk-reacting liners on wave propagation in ducts. (AIAA J) 838
Nayfeh, Ali H. (JH; see Mook, Dean T.)
Nebolsine, P. E. (AIAA J; see Pirri, A. N.)
Needleman, A. Axisymmetric buckling of elastic-plastic annular plates. (AIAA J, TN) 1594
Neemeh, Rafik A. (AIAA J; see Wu, James H. T.)
Neer, J. T. INTELSAT IV nutation dynamics. (PS, V. 33) 57
Neham, E. A. (PS, V. 32; see Henry, V. F.)
Nelms, Walter P. (A/A, Sept.; see Gregory, Thomas J.)
Nelson, Paul, Jr. (AIAA J, TC; see Denman, E. D.)
Netzer, D. W. (AIAA J, SYN; see Murphy, J. L.)
Neulieb, Robert L. (JA; see Simpkins, Darrell)
Newman, J. A. (AIAA J; see Wong, J. K. S.)
Newman, M. (JA; see Pines, S.)
Newman, P. A. (JA, EN; see Klunker, E. B.)
Nguyen, Phung K. Comments on "Analytical design of optimal nutation dampers." (JSR, TC) 606
Niblock, G. A., Reeder, J. C., and Huneidi, F. Four space shuttle wing leading edge concepts. (JSR) 314
Nicholls, J. A. (AIAA J; see Fry, R. S.)
Nickelson, R. L. (PS, V. 32; see Kale, P. P.)
Nicolet, William E. (JSR; see Peterson, David L.)
Nichols, M. A. and Hedrick, J. Karl Minimum time and minimum fuel flight path sensitivity. (JA) 320
Nidey, Russell A. Optimal scan of the sky from a rocket. (AIAA J, TN) 1162
Nieberding, W. C. and Englund, D. R., Jr. Modularized instrument system for turbojet engine test facilities. (PS, V. 34) 205
Nieberdin, William C. (PS, V. 34; see Lesco, Daniel J.)
Niedzwiecki, Richard W. and Jones, Robert E. Pollution measurements of a swirl-can combustor. (AIAA J) 844
Niehoff, John C. and Friedlander, Alan L. Comparison of advanced propulsion capabilities for future planetary missions. (JSR) 566
Nielsen, Jack N. (AIAA J, SYN; see Kuhn, Gary D.)
Nielsen, P. E. (AIAA J; see Jackson, J. P.)
Niioka, Takashi and Mitani, Tohru Independent region of acceleration in solid propellant combustion. (AIAA J, TN) 1759
Nilson, R. H. and Tsuei, Y. G. Film cooling by oblique slot injection. (AIAA J, TN) 727
Nisbet, James W. (A/A, January; see Jones, Robert T.)
Nixon, D. Transonic flow around symmetric aerofoils at zero incidence. (JA, EN) 122
Noggle, R. C. (JSR; see Krider, E. P.)
Noji, T. T. (PS, V. 32; see Sielman, P. F.)
Noll, Richard B. and McElroy, Michael B. Engineering models of the Venus atmosphere. (JSR) 21
Nolte, E. P., Stearman, R. O., and Russell, P. E. Simple active aerodynamic suspension systems for high-speed ground vehicles. (JA) 690
Norris, P. Accuracy of orbit determination from ionospherically corrupted tracking data. (JSR, EN) 794
Nowell, A. R. M. Some response characteristics of parabolic hot films in water. (JH, EN) 169
Nunamaker, Robert R. (JSR; see Dyer, John W.)
Nybakken, G. H. (JA; see Clark, S. K.)
Oates, G. C. (PS, V. 34; see Grande, E.)
Oberkampf, William L. and Watson, Leon E., Jr. Incompressible potential flow solutions for arbitrary bodies of revolution. (AIAA J, TN) 409
O'Connell, R. F. Incremented flutter analysis. (JA) 236
Oden, J. T., Akay, H., and Johnson, C. P. Reply by authors to R. D. Cook. (AIAA J, TC) 1290
Oh, Youn H. Calculation of compressible turbulent free shear layers. (AIAA J, TN) 401
O'Hare, J. E. (PS, V. 34; see Trolinger, J. D.)
Ohlemiller, T. J. (AIAA J; see Kubota, N.)
Ohtokay, Hiroshi (JSR; see Jerath, Navin)
Ojalvo, I. U. Improved thermal stress determination by finite element methods. (AIAA J, TN) 1131
O'Keefe, J. D. (AIAA J; see Johnson, R. L.)
Okurounmu, Olufemi and McCune, James E. Lifting surface theory of axial compressor blade rows: Part I—Subsonic compressor. (AIAA J) 1363

——and McCune, James E. Lifting surface theory of axial compressor blade rows: Part II—Transonic compressor. (AIAA J) 1372
Oliver, D. A. (AIAA J; see Argyropoulos, G. S.)
Ollendorf, S. (PS, V. 35; see Harwell, W.)
Olmsted, G. S. (AIAA J, TN; see Ericsson, L. E.)
Olstad, Walter B. A thick-thin approximation for radiative transfer. (PS, V. 35) 75
——Planetary entry aerothermodynamics. Part I. Technology requirements and experimental facilities. (A/ A, Nov.) 58
——Planetary entry aerothermodynamics. Part II. Computational analysis and flight experience. (A/ A, Dec.) 55
Ondrasik, V. J. (JSR; see Ransford, G. A.)
Onufry, M. (PS, V. 33; see Suyderhoud, H. G.)
Oppenheim, Antoni, K. and Weinberg, Felix J. Combustion R&D—Key to our energy future. (A/ A, Nov.) 22
Orbock, D. (A/ A, July-August; see Sheffield, R. W.)
Orlin, Peter A. and Cutchins, Malcolm A. Optimum vibration isolation system design using linear programing. (AIAA J) 1517
Orloff, K. L. (AIAA J, TN; see Ciffone, D. L.)
Orloff, Kenneth L. Trailing vortex wind-tunnel diagnostics with a laser velocimeter. (JA) 477
Orloff, K. L. and Ciffone, D. L. Vortex measurements behind a swept wing transport model. (JA, EN) 362
Orth, R. C., Billig, F. S., and Grenleski, S. E. Measurement techniques for supersonic combustion testing. (PS, V. 34) 263
Orville, R. E. (JSR; see Krider, E. P.)
Osgerby, I. T. Literature review of turbine combustor modeling and emissions. (AIAA J, SA) 743
——Vibrational nonequilibrium in a high temperature turbojet engine. (JA, EN) 302
Ostrowski, P. Perry (AIAA J; see Wu, James H. T.)
Ostwald, L. T. (JSR; see Follett, W. H.)
Otterman, Bernard and Levine, Andrew S. Analysis of gas-solid particle flows in shock tubes. (AIAA J, SYN) 579
Otto, H. Calculation of nonlinear lift and pitching moment coefficients for slender wing-body combinations. (JA, EN) 489
Overmeir, D. K. (AIAA J, TN; see Forrestal, M. J.)
Owen, F. K. (AIAA J, TN; see Horstman, C. E.)
Padovan, Joseph Solution for inplane and bending fields of tapered anisotropic conical shells. (AIAA J, TN) 101
——Static solution of monoclinic laminated circular plates. (AIAA J, TN) 862
——Generalized Sturm-Liouville procedure for composite domain anisotropic transient conduction problems. (AIAA J, TN) 1158
——Orthogonality procedure for forced response of multispan beams. (AIAA J, TN) 1599
Padovan, Joseph and Gosset, Bernard Static fields of curved generally laminated anisotropic plate strips. (AIAA J, SYN) 737
Palmer, John A. Air Force concepts for RPV application. (A/ A, Oct.) 52
Pan, Y. S. and Sotomayer, W. A. Sonic boom of hypersonic vehicles. (AIAA J, ERR) 416
Pande, K. C., Davies, M. S., and Modi, V. J. Time-optimal pitch control of satellites using solar radiation pressure. (JSR, EN) 601
Pande, K. C. (JSR; see Modi, V. J.)
Panico, V. D. (JA, EN; see James, R. M.)
Paparozzi, Frank A. and Anderson, Neal T. DOD's space test program. (A/ A, June) 42
Parameswaran, V. and Alpay, S. A. Normal impingement of jets. (JA, EN) 189
Parker, A. G. Use of slotted walls to reduce wind-tunnel boundary corrections in subsonic flow. (AIAA J, TN) 1771
Parker, A. G. and Bicknell, J. Some measurements on dynamic stall. (JA) 371
Parsons, Jerome S., Goodson, Raymond E., and Goldschmied, Fabio R. Shaping of axisymmetric bodies for minimum drag in incompressible flow. (JH) 100
Parthan, S. and Johns, D. J. Vibration and flutter of stringer-stiffened cylindrical shells. (JSR) 579
Parthasarathy, S. P. Evaluation of jet noise sources by cross-correlation of far field microphone signals. (AIAA J) 583
Parvatiyar, M. G. (JSR, EN; see Munjal, N. L.)
Pastrick, Harold L., York, Randy J., and Jolly, Alexander C. System performance prediction by modeling test data in digital simulations. (JSR, SYN) 133
Pate, S. R. Comparison of NASA helium tunnel transition data with noise-transition correlation. (AIAA J, TC) 1615
Pate, S. R., Siler, L. G., Stallings, D. W., and Wagner, D. A. Development of an MHD-augmented, high enthalpy, shock tunnel facility. (AIAA J) 289
Patel, V. C. (JH; see Nakayama, A.)
Patha, John T. and Woodcock, Gordon R. Feasibility of large-scale orbital solar/ thermal power generation. (JSR) 409
Payet, G. (PS, V. 32; see Hiergeist, F.)
Payne, Peter R. Coupled pitch and heave porpoising instability in hydrodynamic planning. (JH) 58
——Comment on "The lift force due to von Karman's vortex wake." (JH, TC) 121
Pearce, Blaine E. An approximate distribution of particle mass flux in a high altitude solid propellant rocket plume. (AIAA J, TN) 718
Pearson, B. Douglas, Jr. (PS, V. 35; see Millard, John P.)
Pejsa, Arthur J. Optimum skewed redundant inertial navigators. (AIAA J) 899
Peng, W. Y. (AIAA J, SYN; see Vincent, T. L.)
Pennington, James H. (A/ A, Oct.; see Bryan, Curtis V.)
Peralta, Bernal (JA; see Richardson, Ryden L.)
Perdreauville, Farrell J. (JSR; see Womack, William C.)
Perkins, Richard W. (AIAA J, TN; see Mann, Ronald L.)
Peters, Norbert Surface heat transfer in the flow of dissociated nitrogen. (AIAA J, TN) 1747
Peterson, David L. and Nicolet, William E. Heat shielding for Venus entry probes. (JSR) 382
Philip, C. M. (JSR; see Fearn, D. G.)
Philip, C. M. and Fearn, D. G. Recent hollow cathode investigations at the Royal Aircraft Establishment. (AIAA J) 1319
Phillips, Robert W. and Kryvoruka, John K. Closed-loop flight vehicle qualification testing. (JSR, SYN) 355
Phillips, Samuel C. More national security from the defense dollar: Project ACE. (A/ A, Dec.) 44
Pian, T. H. H. Nonlinear creep analysis by assumed stress finite element methods. (AIAA J, TN) 1756
Pickering, W. H. Proposal: For an International Solar System Decade. (A/ A, Sept.) 22
Pike, Jack Moments and forces on general convex bodies in hypersonic flow. (AIAA J) 1241
Pilkey, Walter D. and Wang, Bo Ping Limiting performance of ground transportation vehicles subject to transient loading. (AIAA J, SYN) 1011
Pimenta, Marcos and Moffat, Robert J. Stability of flow through porous plates: Coalescent jets effect. (AIAA J, TN) 1438
Pinckney, S. Z. An improved static probe design. (AIAA J, TN) 562
Pindzola, Michael Ground testing and simulation—An overview: Part IV: Propulsion testing. (A/ A, July-August) 63
Pines, S. and Newman, M. Constrained structural optimization for aeroelastic requirements. (JA) 313
Pirri, A. N., Monsler, M. J., and Nebolsine, P. E. Propulsion by absorption of laser radiation. (AIAA J) 1254
Pitkins, Edward T. (JA; see Presz, Walter M., Jr.)
Pitts, W. C. (JSR; see Vorreiter, J. W.)
Plaetschke, Ermin (JA, EN; see Henschel, Frohmut)
Pleasants, James E. Parachute mortar design. (JSR) 246
Plett, E. G. (AIAA J; see Abdelhamid, A. N.)
Plotkin, Allen Laminar boundary-layer induced wave forces on a submerged flat-plate hydrofoil. (JH) 47
——The symmetric far wake behind a cylinder beneath the free surface. (JH, EN) 41
Plucinsky, J. C. (JA; see Eatock, H. C.)
Podraczky, E. and Kiesling, J. D. INTELSAT V system concepts and technology. (PS, V. 32) 31
Poirier, J. L. (JSR; see Hayes, D. T.)
Polak, A. Numerical study of supersonic turbulent boundary layer over a small protuberance. (AIAA J, TN) 1409
Polhamus, E. C., Kilgore, R. A., Adcock, J. B., and Ray, E. J. The Langley cryogenic high Reynolds number wind-tunnel program. (A/ A, Oct.) 30
Polhemus, C. E. (JSR; see Tewell, J. R.)
Pollack, Frank G. Advances in measuring techniques for turbine cooling test rigs: Status report. (PS, V. 34) 371
Pollard, Ben M. Aerodynamics Hanoi Hilton style. (A/ A, Sept.) 71
Poole, Lamont R. and Whitesides, John L. Suspension-line wave motion during the lines-first parachute unfurling process. (AIAA J) 38
Portnoy, H. (AIAA J; see Cohen, M. J.)
Postula, Frank D. (JSR, SYN; see Bradshaw, George B.)
Potter, J. Leith Boundary-layer transition on cones near Mach one. (AIAA J, TN) 570
Powers, William F. (JSR; see Jacobson, Robert A.)
Prabhu, M. S. S. and Durvasula, S. Postbuckling behavior of clamped skew plates. (AIAA J, TN) 1423
Prasad, Anant and Agrawal, H. C. Biot's variational principle for aerodynamic ablation of melting solids. (AIAA J, TN) 250

Prasad, B. (AIAA J; see Radhamohan, S. K.)
Presz, Walter M., Jr. and Pitkin, Edward T. Flow separation over axisymmetric afterbody models. (JA) 677
Price, C. F. (JSR, EN; see Messner, A. M.)
Pringle, Ralph, Jr. Effect of perturbed orbital motion on a spinning symmetrical satellite. (JSR) 451
Prins, Dougal W. S. (A/ A, Sept.; see Colby, Starr J.)
Pritchard, E. Brian, Harrison, Edwin F., and Moore, Jesse W. Options for Mars exploration. (A/ A, February) 46
Probst, E. P. and Hillberry, B. M. Fatigue crack delay and arrest due to single peak tensile overloads. (AIAA J) 330
Prussing, John E. (AIAA J; see Gross, Larry R.)
Przemieniecki, J. S. Reply by author to W. H. Wittrick. (AIAA J, TC) 124
Putz, Kurt E. (JSR; see Cooper, Larry)
Quantock, Charles W. (PS, V. 32; see Waltz, Donald M.)
Quinn, B. (JA; see Campbell, D. R.)
Raab, Bernard (JSR, SYN; see Frey, Elmer J.)
Radhamohan, S. K. (AIAA J, TN; see Rao, G. Venkateswara)
Radhamohan, S. K. and Prasad, B. Asymmetric buckling of toroidal shells under axial tension. (AIAA J) 511
Radley, Roger J., Jr. (AIAA J; see Havener, Albert G.)
Raeder, J. (AIAA J, TN; see Daily, J. W.)
Ragan, Ralph R. Report. (JSR, E) 1
Raghunandan, B. N. (AIAA J, TN; see Mukunda, H. S.)
Raghunathan, S. (AIAA J, TN; see Bergstrom, E. R.)
Ragsdale, W. C. (PS, V. 34; see Spring, W. C., III)
Raju, I. S. (AIAA J, TN; see Rao, G. Venkateswara)
Rakich, J. V. (AIAA J, SYN; see Tannehill, J. C.)
Ramachandra, S. M. (JA, EN; see Bera, Rajendra K.)
Ramaiah, G. K. and Vijayakumar, K. Buckling of polar orthotropic annular plates under uniform internal pressure. (AIAA J) 1045
Ramsden, Philip (JSR, EN; see Usiak, Leonard)
Randall, Roger R. (A/ A, July-August; see Van Allen, James A.)
Ransford, G. A., Hildebrand, C. E., and Ondrasik, V. J. Orbit determination capability analysis for the Mariner-Jupiter-Saturn 1977 mission. (JSR) 658
Rao, B. V. A. (JSR, SYN; see Bhat, B. Rama)
Rao, G. N. V. Comment on "Mean velocity profile of a thick turbulent boundary layer along a circular cylinder." (AIAA J, TC) 574
Rao, G. Venkateswara, Radhamohan, S. K., and Raju, I. S. Reinvestigation of buckling of shells of revolution by a refined finite element. (AIAA J, TN) 100
Rao, Prabhakara P. Inviscid supersonic far wake flow past pointed bodies. (AIAA J, SYN) 421
Rao, Prabhakara P. and Lefferdo, James M. Time-saving asymptotic solution for sphere-cones in hypersonic flow. (AIAA J, TN) 386
Rao, V. Seshagiri (JSR, EN; see Srinivasan, K.)
Rao, Y. V. K. Sadasiva and Sinha, P. K. Vibrations of sandwich plates under uniaxial compression. (AIAA J, TN) 1282
Rapuano, R. A. and Shimasaki, N. Synchronization of Earth stations to satellite-switched sequences. (PS, V. 33) 411
Raseman, Chad J. (JSR; see Ludewig, Hans)
Rasmussen, Maurice L. (AIAA J, TN; see Fiorino, Thomas D.)
Rasool, S. I. (A/ A, Sept.; see Beckman, J. C.)
Rastogi, R. P. and Deepak, Desh Char formation in ablatives. (AIAA J, TN) 114
Rastogi, R. P., Kishore, K., and Chaturvedi, B. K. Heterogeneous combustion studies on polystyrene and oxygen styrene copolymer. (AIAA J) 1187
Rastogi, R. P., Kishore, K., and Singh, Gurdip Combustion of polystyrene and oxygen-styrene copolymer/ ammonium perchlorate propellants. (AIAA J, SYN) 9
Rastogi, R. P., Singh, H. J., and Kishore, K. Studies on mixed fuels—hydrazine and ethyl alcohol system. (AIAA J, TN) 227
Rathi, Jaipal S. (AIAA J, TN; see Hall, J. Gordon)
Ray, A. M. (JSR; see Tewell, J. R.)
Ray, Edward J. (JA; see Kilgore, Robert A.)
——(A/ A, Oct.; see Polhamus, E. C.)
Rebont, Jean (AIAA J, TN; see Maresca, Christian)
Reda, Daniel C. Comment on "Calculation of turbulent boundary-layer shock-wave interaction." (AIAA J, TC) 1291
Redd, L. T., Gilman, J., Jr., Cooley, D. E., and Sevart, F. D. Wind-tunnel investigation of a B-52 model flutter suppression system. (JA) 659
Redall, Walter F., III Reply by author to I. Beckwith (AIAA J, TC) 1616
Reddy, K. R. Unsteady vortex flow past an inflating, decelerating wedge. (JA, EN) 427
Reddy, R. S. (AIAA J, TN; see Weston, Kenneth C.)
Rediess, Herman A. (JA; see Johnson, Walter A.)
Redman, M. C. (JA; see Rowe, W. S.)
Reed, R. Dale RPRVs: The first and future flights. (A/ A, April) 26
Reeder, J. C. (JSR; see Niblock, G. A.)
Reedy, Gary K. (JSR; see Strand, Leon D.)
Reese, Charles D. and Bert, Charles W. Buckling of orthotropic sandwich cylinders under axial compression and bending. (JA) 207
Reeves, Barry L. Two-layer model of turbulent boundary layers. (AIAA J) 932
Regnier, P. R., Moya, F., and Taran, J. P. E. Gas concentration measurement by coherent Raman anti-Stokes scattering. (AIAA J) 826
Rehfield, L. W. Nonlinear flexural oscillations of shallow arches. (AIAA J, TN) 91
——Large amplitude forced vibrations of elastic structures. (AIAA J, TN) 388
Rehfield, L. W., Giri, J., and Sparrow, C. A. Edge restraint effect on vibration of curved panels. (AIAA J, TN) 239
Reidel, B. (PS, V. 33; see Eckhardt, G.)
Reinecke, W. G. Debris shielding during high-speed erosion. (AIAA J, TN) 1592
Reinhardt, Thomas F. (JSR; see Shorr, Morton)
Reshotko, Meyer, Goodykoontz, Jack H., and Dorsch, Robert G. Engine-over-the-wing noise research. (JA, SYN) 195
Reukauf, Paul J. (JA; see Webb, William L.)
Rex, D. and Kohnecke, B. Redundant configuration of electric propulsion systems for stationkeeping. (JSR) 488
Reynolds, Philip A. Ground testing and simulation—An overview: Part III: Flight simulation. (A/ A, July-August) 58
Rich, Ben R. F-12 series aircraft aerodynamic and thermodynamic design in retrospect. (JA) 401
Richardson, Ryden L. and Peralta, Bernal Refining of turbine fuels by modern hydrotreating. (JA) 771
Richie, Christine B. (JA, EN; see Jones, Robert A.)
Ricks, Brad L. (JH; see Hanks, Richard W.)
Ridihalgh, John L. (JSR; see Eggers, Philip E.)
Riedmuller, Wolfgang (AIAA J; see Nakamura, Takashi)
Rindal, Roald A. (JSR; see Wool, Mitchell R.)
Rinker, George C. (JSR; see Jacobson, Robert A.)
Robben, Frank (AIAA J; see Becker, Manfred)
Robbins, B. and Lakshminarayana, B. Effect of inlet turbulence on compressor noise. (JA) 273
Roberts, B. W. Aerodynamic inflation of shell type, parachute structures. (JA) 390
——Axisymmetric, self-excited oscillations in parachutes. (JA) 736
Roberts, C. C., Jr. and Feldman, K. T., Jr. A probabilistic approach to the design of heat pipes. (PS, V. 35) 371
Roberts, J. B. Probability of first passage failure for stationary random vibration. (AIAA J) 1636
Robertson, J. M. (AIAA J, TN; see Evbuoma, S. N.)
Robertson, S. R. (AIAA J; see Brunelle, E. J.)
Robinson, C. E. (JA; see German, R. C.)
Robinson, Lawrence Baylor and Yang, Tien Tsai Inverse relationships in equilibrium statistical thermodynamics. (AIAA J, TN) 1433
Rodden, J. J. (JSR; see Lebsock, K. L.)
Rodden, William P., Giesing, Joseph P., Kalman, Terez P., and Rowan, Jack C. Comment on "A finite-element method for calculating aerodynamic coefficients of a subsonic airplane." (JA, TC) 366
Rodkiewicz, Czeslaw M. Hypersonic flow with viscous interaction over a sharp slender wedge. (AIAA J, SYN) 7
Rogers, David F. Further comments on "Local nonsimilarity boundary-layer solutions." (AIAA J, TC) 1007
Rogers, Kenneth H. Boundary-layer theory for pressure and drag of a wavy surface. (JA) 382
Rogers, R. C. and Eggers, J. M. Supersonic combustion of hydrogen injected perpendicular to a ducted vitiated airstream. (AIAA J, SYN) 1621
Rohy, David A. (PS, V. 34; see Van Roberts, J.)
Rom, J. (JA; see Braha, J.)
Roper, Alan T. and Gentry, Garl L. Growth of turbulent boundary layers over nonstationary boundaries. (AIAA J, TN) 95
Rosciszewski, J. J. and Yeh, T. T. Establishment of quasi-steady conditions in a blow-down nonequilibrium MHD generator. (AIAA J) 1021
Rose, P. G. (AIAA J; see Rowlands, R. E.)
Rose, William C. Turbulence measurements in a compressible boundary layer. (AIAA J) 1060
——(AIAA J, TN; see Rubesin, M. W.)
Rosen, Aviv and Singer, Josef Effect of axisymmetric imperfections on

the vibrations of cylindrical shells under axial compression. (AIAA J, TN) 995
Rosen, Gerald Manufacture and deflagration of an atomic hydrogen propellant. (AIAA J) 1325
Rosen, J. M. and Greegor, R. Jet engine soot emission measured at altitude. (JA, EN) 243
Rosen, S. G. (JSR; see Huberman, M. N.)
Rosenberg, N. W., Good, R. E., Vickery, W. K., and Dewan, E. M. Experimental investigation of small scale transport mechanisms in the stratosphere. (AIAA J) 1094
Rosenthal, L. A. and Menichelli, V. J. Thermal coupling measurement method. (JSR) 282
Roskam, Jan and Henry, Samuel Synthesis of a separate surface wing leveler. (JA, SYN) 657
Ross, R. Boundary-layer transition on the same model in two supersonic wind tunnels. (AIAA J, TN) 992
Rossbach, Dennis R. (PS, V. 34; see Couch, Robert P.)
Roth, R. S. (AIAA J; see Shiau, A. C.)
Rothwell, W. S. and Schick, H. L. Emission spectra from a stream of cooling particles. (JSR, EN) 597
Rouklove, P. Performance testing of a transit generator at JPL. (JSR, EN) 434
Roux, J. A. and Smith, A. M. Comparison of three techniques for solving the radiative transport equations. (PS, V. 35) 3
——and Smith, A. M. Radiative transport analysis for plane with isotropic scattering and arbitrary temperature. (AIAA J) 1273
Roux, J. A., Smith, A. M., and Shahrokhi, F. Effect of boundary conditions on the radiative reflectance of dielectric coatings. (PS, V. 35) 131
Rowan, Jack C. (JA, TC; see Rodden, William P.)
Rowe, W. S., Winther, B. A., and Redman, M. C. Unsteady subsonic aerodynamic loadings caused by control surface motions. (JA) 45
Rowlands, R. E., Liber, T., Daniel, I. M., and Rose, P. G. Stress analysis of anisotropic laminated plates. (AIAA J) 903
Roy, Sreedhan Reply by author to T. Y. Na. (AIAA J, TC) 1775
Rubesin, M. W., Murphy, J. D., and Rose, W. C. Wall shear in strongly retarded and separated compressible turbulent boundary layers. (AIAA J, TN) 1442
Rubin, S. G. (AIAA J; see Lin, T. C.)
Rudey, C. J. (JSR; see DeBrock, S. C.)
Rudinger, George Experimental investigation of gas injection through a transverse slot into a subsonic cross flow. (AIAA J, TN) 566
——Penetration of particles injected into a constant cross flow. (AIAA J, TN) 1138
Rudisill, Carl S. Derivatives of eigenvalues and eigenvectors for a general matrix. (AIAA J, TN) 721
Rudy, David H. and Birch, Stanley F. Mean flow development and surface heating for an attaching compressible free shear layer. (JSR, EN) 348
Ruo, S. Y. (AIAA J; see Kimble, K. R.)
Ruo, S. Y., Yates, E. Carson, Jr., and Theisen, J. G. Calculation of unsteady transonic aerodynamics for oscillating wings with thickness. (JA) 601
Rupp, H. (PS, V. 33; see Eckhardt, G.)
Ruppe, Harry O. Helios/ the sungrazer. (A/ A, June) 62
——Following the trail blazed by Helios. (A/ A, July-August) 53
Russell, P. E. (JA; see Nolte, E. P.)
Saad, Michel A. and Goldwasser, Samuel R. Time-temperature simulation in low-pressure ignition of hypergolic liquids. (AIAA J, SYN) 11
Saaski, E. W. Gas occlusions in arterial heat pipes. (PS, V. 35) 353
Sabbaghian, M. and Eslami, M. R. Creep relaxation of nonaxisymmetric thermal stresses in thick walled cylinders. (AIAA J) 1652
Sachs, Gottfried Stability limits for downsprings. (JA, EN) 710
Saeed, Iftikhar and Stuiver, Willem Periodic boom forces in dumbbell-type satellites moving in a circular orbit. (AIAA J, SYN) 423
Safarik, R. R. (AIAA J, TN; see Kirchhoff, R. H.)
Saffman, P. G. and Wilcox, D. C. Turbulence-Model predictions for turbulent boundary layers. (AIAA J) 541
Saffren, Melvin M. (A/ A, July-August; see Wang, Taylor G.)
Sagartz, Mathias J. Response of a three-layered ring to an axisymmetric impulse. (AIAA J, TN) 390
Saintsbury, J. A. (JA; see Eatock, H. C.)
Saito, Haruo (AIAA J; see Tsuchiya, Kazuo)
Sajben, M. An integral theory for inviscid, rotational flow in variable area ducts. (AIAA J, TN) 378
Salkeld, Robert Single-stage shuttles for ground launch and air launch. (A/ A, March) 52
Sallet, D. W. Reply by author to P. R. Payne. (JH, TC) 123
Salomon, M. (JA; see Braha, J.)
Salzman, P. K. and Duncan, T. C. Prediction of the critical diameter of composite propellants. (AIAA J) 985
Samin, J. -C. (AIAA J; see Boland, P.)
Sandell, N. R., Jr. (AIAA J; see Scharmack, D. K.)
Sanders, Robert OMEGA—Past, present, and future. (A/ A, April) 50
Sanderson, Richard B. (PS, V. 35; see Thompson, Samuel B.)
Sandhu, G. S. Rigid body mode pointing accuracy and stability criteria for an orbiting spacecraft. (JSR, EN) 599
Sandman, B. E. and Kelly, J. G. Systems identification: Application to underwater vehicle dynamics. (JH) 94
Sandri, R. (AIAA J; see Wong, J. K. S.)
Sanjurjo, Liber (JA; see Dat, Jacques)
San Miguel, Anthony Design of missile-aircraft component white noise isolators. (JA) 704
Sanscrainte, W. (JSR; see Chazen, M. L.)
Santman, Don M. (JA; see Glasgow, Edsel R.)
Saradhy, Y. P. (AIAA J, TN; see Dhameja, R. K.)
Sarles, F. W., Jr. (PS, V. 32; see Kale, P. P.)
Sarpkaya, Turgut Effect of the adverse pressure gradient on vortex breakdown. (AIAA J) 602
Savet, Paul H. (JSR, EN; see Cohen, Victor D.)
Sawyer, James Wayne (JA; see Shyprykevich, Peter)
Sayer, L. H. (JSR; see Mihlfeith, C. M.)
Scaccia, Carl and Kennedy, Lawrence A. Calculating two-dimensional chemically reacting flows. (AIAA J) 1268
Schadow, K. (AIAA J; see Abbott, S. W.)
Scharmack, D. K. and Sandell, N. R., Jr. Generalized quasi-linearization method. (AIAA J) 1236
Schenk, Frederick L. (JA; see McMaster, John R.)
Scher, M. P. and Farrenkopf, R. L. Dynamic trap states of dual-spin spacecraft. (AIAA J) 1721
Schexnayder, Charles J., Jr. (JSR; see Evans, John S.)
Schexnayder, C. J., Jr. and Evans, J. S. Influence of ablation impurities on blunt body re-entry ionization. (AIAA J) 805
Schick, H. L. (JSR, EN; see Rothwell, W. S.)
Schiehlen, Werner O. Fine pointing system for large orbiting telescopes. (JSR, SYN) 273
Schiring, Earl E. (AIAA J; see de Virgilio, Miguel A.)
Schlack, A. O., Jr. (AIAA J, TN; see Dong, W. N.)
Schlichting, Hermann Recent Progress in boundary-layer research. (AIAA J, 37th Wright Brothers Lecture) 427
Schmall, Robert A. and Kinney, Robert B. Numerical study of unsteady viscous flow past a lifting plate. (AIAA J) 1566
Schmars, W. T. (JSR; see Cooper, G. L.)
Schmidt, Robert (AIAA J, TN; see DaDeppo, Donald A.)
Schmit, L. A., Jr. and Farshi, B. Some approximation concepts for structural synthesis. (AIAA J) 692
Schmitt, George F., Jr. On the dependence of materials erosion on environmental parameters at supersonic velocities. (JA, ERR) 192
Schmitt, R. J., Linford, R. M. F., Dillow, C. F. and Hughes, T. A. Infrared properties of reusable surface insulations. (PS, V. 35) 183
Schmitz, Peter D. and McManus, Neil P. Average structural response to locally stationary random excitation. (AIAA J, TN) 229
Schneider, G. E. and Yovanovich, M. M. Correlation of the over-all thermal resistance of metallic O-rings contacting two cylinders. (JSR, EN) 206
Schnurr, N. M. and Cothran, C. A. Radiation from an array of gray circular fins of trapezoidal profile. (AIAA J) 1476
Schock, Alfred (JSR, SYN; see Frey, Elmer J.)
Schroeder, K. G. Characteristics and applications of multibeam spacecraft antennas. (PS, V. 33) 503
Schueler, C. J. (AIAA J, SYN; see Starr, R. F.)
Schulz, R. J. and Bauer, R. C. Rocket plume testing in ground test facilities. (JSR) 16
Schulze, Hans-Kurt (JA, EN; see Henschel, Frohmut)
Schultz, August L. (JSR; see Strand, Leon D.)
Schultz, Robert L. Fuel optimality of cruise. (JA, EN) 586
Schumacher, G. A. (PS, V. 34; see Farr, A. P.)
Schuster, John R. (JSR; see Ward, Theodore E.)
Schuster, John R., Glickman, Roger A., and Hender, Douglas R. Transpiration nosetip coolant flow control. (JSR) 152
Schutz, Bob E. Analytical approach to orbit determination in the presence of model errors. (AIAA J) 298
Schutz, B. E., McMillan, J. D., and Tapley, B. D. Comparison of statistical orbit determination methods. (AIAA J, SYN) 1465
Schwartz, L. (PS, V. 32; see Sielman, P. F.)
Schwartz, Sidney H. (JSR; see Lovrich, Thomas M.)
Schwedland, Ronald P. and Hall, Morris F. Instrumenting a stoichiometric turbine development engine. (PS, V. 34) 387
Schweikhard, William G. and Montoya, Earl J. Research in-

strumentation requirements for flight/ wind-tunnel tests of the YF-12 propulsion system and related flight experience. (PS, V. 34) 19
Schwenzfeger, Klaus J. Contribution to regularization in optimal trajectory problems. (AIAA J) 850
Scott, David S. (AIAA J, TN; see Collier, Robert P.)
Seals, R. K., Jr. (AIAA J; see Brockman, Philip)
——**Analysis of tunable laser heterodyne radiometry: Remote sensing of atmospheric gases.** (AIAA J) 1118
Sears, W. R. On calculation of induced drag and conditions downstream of a lifting wing. (JA, EN) 191
Seebass, A. R. and George, A. R. Design and operation of aircraft to minimize their sonic boom. (JA) 509
Seemann, Gerald R., Harris, Gordon L., Brown, Glen J., and Cullian, Charles A. Remotely piloted mini-blimps for urban applications. (A/ A, February) 31
Seginer, A. (JA; see Braha, J.)
Segletes, John A. Explicit numerical method for solution of heat-transfer problems. (AIAA J, SYN) 1463
Seidel, F. (JSR, SYN; see Liebing, L.)
Seifert, Howard S. (JSR; see Meetin, Ronald J.)
Seltzer, S. M. (JSR; see Kuo, B. C.)
Serafini, John S. and Terdan, Fred F. Plasma fluctuations in a Kaufman thruster. (JSR) 752
Serra, Raymond A. (AIAA J, SYN; see Ganz, Anthony A.)
Sevart, F. D. (JA; see Redd, L. T.)
Shackleford, W. L., Witte, A. B., Broadwell, J. E., Trost, J. E., and Jacobs, T. A. Experimental measurements in supersonic reacting ($F+H_2$) mixing layers. (AIAA J, SYN) 1009
Shaffernocker, W. M. Current state-of-the-art for airbreathing combustor measurements. (PS, V. 34) 227
Shahrokhi, F. (PS, V. 35; see Roux, J. A.)
Shang, J. S. Computation of hypersonic turbulent boundary layers with heat transfer. (AIAA J, SYN) 883
Shanks, S. P. (AIAA J; see Thompson, J. F.)
Sharifi, P. and Yates, D. N. Nonlinear thermo-elastic-plastic and creep analysis by the finite-element method. (AIAA J) 1210
Sharma, J. P. On Murphy's stability criterion. (JSR, EN) 432
Sharma, S. C. (JA, EN; see Gupta, A. K.)
Sharma, Subhash Chander and Stuiver, Willem Boom forces in librating dumbbell-type satellites. (AIAA J, SYN) 425
Sheffield, R. W. and Orbock, D. Ground testing and simulation—An overview: Part V: Space simulation. (A/ A, July-August) 67
Sheinman, Izhak and Tene, Yair Buckling in segmented shells of revolution subjected to symmetric and antisymmetric loads. (AIAA J) 15
——**and Tene, Yair** Reply by authors to G. A. Cohen. (AIAA J, TC) 1775
Shelor, D. E. (JSR, EN; see Fein, H. L.)
Sherman, P. M. and Gell, D. Variable energy blast wave measurements. (AIAA J, TN) 117
Shiau, A. C., Roth, R. S., and Soong, T. T. Dynamic buckling of conical shells with imperfections (AIAA J) 755
Shideler, John L. (JA; see Musgrove, Max D.)
Shimasaki, N. (PS, V. 33; see Rapuano, R. A.)
Shioda, Susumu and Yamasaki, Hiroyuki Suppression of ionization instability in an MHD disk generator. (AIAA J, TN) 1763
Shorr, Morton and Reinhardt, Thomas F. Feasibility of a fluidized powder demand-mode gas generator. (JSR) 29
Shoup, T. E. (JSR, EN; see Fletcher, L. S.)
Shrestha, Gambhir M. Approximate method for solving boundary-layer equations. (AIAA J, TN) 382
Shumaker, H. A. (PS, V. 33; see Herron, B. G.)
Shyprykevich, Peter and Sawyer, James Wayne Flutter of orthotropic panels at arbitrary yaw angles—Experiment and theory. (JA) 15
Sibley, R. K. Engine condition monitoring as a part of the propulsion management concept. (PS, V. 34) 463
Siddiqi, Toufiq F. Parameters of technological growth: What makes an optimist? (A/ A, June) 15
Sielman, P. F., Schwartz, L., and Noji, T. T. Multiple beam communications satellites with remote beam steering and beam shaping. (PS, V. 32) 265
Siemers, Paul M., III (JSR; see Steinberg, Sy)
Siler, L. G. (AIAA J; see Pate, S. R.)
Simmons, N. The United Kingdom program of communications satellites. (PS, V. 32) 293
Simodynes, E. E. Gradient optimization of structural weight for specified flutter speed. (JA) 143
Simpkins, Darrell, Neulieb, Robert L., and Golden, Dennis J. Fatigue—A test integrated damage modeling approach. (JA) 563
Simpson, J. O. (JSR; see Follett, W. H.)
Singa-Rao, K. and Amba-Rao, C. L. Analysis of axisymmetric shells by transfer matrix method. (JSR) 829
Singer, A. and Minkowski, J. M. Role of plasma boundary conditions in the comparison of electron plasma temperatures. (AIAA J, TN) 876
——**and Minkowski, J. M.** Basic limitation in microwave measurement of plasma temperature. (AIAA J, TN) 1286
Singer, Josef (AIAA J, TN; see Rosen, Aviv)
Singh, Anand V. (AIAA J, TN; see Mirza, Shaukat)
Singh, G. (JSR; see Kuo, B. C.)
Singh, Gurdip (AIAA J, SYN; see Rastogi, R. P.)
Singh, H. J. (AIAA J, TN; see Rasotgi, R. P.)
Singh, I. (AIAA J; see Tsou, F. K.)
Singh, J. P. (PS, V. 32; see Morgan, R. P.)
Singletary, H. J. Growing procedural problems of washing mammoth aircraft. (JA, EN) 587
Singleton, Robert E. and Nash, John F. Method for calculating unsteady turbulent boundary layers in two- and three-dimensional flows. (AIAA J) 590
Sinha, P. K. (AIAA J, TN; see Rao, Y. V. K. Sadasiva)
Sinha, Ram Torque development on a spherical body due to spin up of the concentric spherical container. (AIAA J, TN) 404
Skala, George F. The in-line oil monitor and its role in engine conditions monitoring. (PS, V. 34) 499
Skifstad, J. G. (AIAA J; see Meese, R. A.)
Slabinski, Victor J. Variation in range, range-rate, propagation time delay, and Doppler shift for a nearly geostationary satellite. (PS, V. 33) 3
Slayman, Roberg G. (JSR; see Steinberg, Sy)
Small, L. L. and Longstreet, C. S. An ultrasonic turbine inlet gas temperature sensor. (PS, V. 34) 437
Smith, A. M. (PS, V. 35; see Roux, J. A.)
Smith, C. V., Jr. (AIAA J; see Smith, Donald R.)
Smith, Dennis R. (AIAA J, TN; see Murphree, David L.)
Smith, Donald R. and Smith, C. V., Jr. When is Hamilton's principle an extremum principle? (AIAA J) 1573
Smith, G. Charles C. (JA, SYN; see Appa, Kari)
Smith, Jimmie H. Thermal analysis for antenna window in AGM nosetip. (JSR, EN) 198
Smith, Neill S., Hassan, H. A., and McInville, Roy M. Small signal gain calculations for high-flow CO discharge lasers. (AIAA J, SYN) 1619
Smith, Raymond (AIAA J, TN; see Kaloni, Purna N.)
Smith, Russell A. (AIAA J, SYN; see Mowlem, A. Robin)
Smith, R. H. and Burcham, F. W., Jr. Instrumentation for in-flight determination of steady-state and dynamic inlet performance in supersonic aircraft. (PS, V. 34) 41
Smith, T. F. and Hering, R. G. Surface roughness effects on bidirectional reflectance. (PS, V. 35) 145
Smithey, William J. H. Value of Mach angle for a given Prandtl-Meyer angle. (AIAA J, TN) 1596
Smoot, L. D. (AIAA J; see Abbott, S. W.)
Snedeker, Richard S. (JA; see Donaldson, Coleman duP.)
Snowball, H. M. Engine aids and the metrologist syndrome. (PS, V. 34) 505
Sobieszczanski, J. (JA, SYN; see Fulton, Robert E.)
——(AIAA J, TN; see Storaasli, Olaf O.)
Soderman, Paul T. (JA; see Hersh, Alan S.)
Sohal, Manohar S. and Howell, John R. Thermal modeling of a plate with coupled heat-transfer modes. (PS, V. 35) 99
Sood, Des R. and Elrod, Harold G., Jr. Numerical solution of the incompressible Navier-Stokes equations in doubly connected regions. (AIAA J) 636
Soong, T. T. (AIAA J; see Shiau, A. C.)
Sorenson, Norman E. and Bencze, Daniel P. Possibilities for improved supersonic inlet performance. (JA) 288
Sotomayer, W. A. (AIAA J, ERR; see Pan, Y. S.)
Spangenberg, George High-low mix—Solution or problem? (A/ A, Sept.) 18
Spangler, G. E. (JA; see Levy, S. A.)
Sparrow, C. A. (AIAA J, TN; see Rehfield, L. W.)
Spencer, T. M. Energy-sink analysis for asymmetric dual-spin spacecraft. (JSR) 463
——(JSR; see Follett, W. H.)
Speyer, Jason (JA, EN; see Zeldin, Saydean)
Speyer, Jason L. and Gustafson, Donald E. Stochastic optimal control of linear dynamic systems. (AIAA J, SA) 1013
Spring, W. C., III and Ragsdale, W. C. Investigation of the use of holography in studying supersonic flow in inlets. (PS, V. 34) 95
Spunt, Leonard A programing approach to optimal structural design using structural indices. (AIAA J, TN) 865

Srinivasan, A. V. (AIAA J; see David Thomas S.)
——(AIAA J; see Dowell, E. H.)
Srinivasan, G. (AIAA J, TN; see Hall, J. Gordon)
Srinivasan, K., Rao, V. Seshagiri, and Murthy, M. V. Krishna Design considerations for space chamber cryopanels. (JSR, EN) 862
Sriramulu, A. N. (AIAA J, TN; see Baijal, S. K.)
Staffs of Space Dept., APL, and G&C Control Lab., Stanford U. A satellite freed of all but gravitational forces: "TRIAD I." (JSR) 637
Stahle, Clyde V. (AIAA J; see Kuhar, Edward J.)
Stake, W. R. (AIAA J, TN; see Ericsson, L. E.)
Stallings, D. W. (AIAA J; see Pate, S. R.)
Starr, R. F. and Schueler, C. J. Experimental studies of a Ludweig tube high Reynolds number transonic tunnel. (AIAA J, SYN) 267
Stauffer, John K. (JA, EN; see Der, Joe, Jr.)
Stearman, R. (JA; see Nolte, E. P.)
——(AIAA J; see Horn, W.)
Steenken, W. G. Effect of transducer diameter on resolution of total pressure fluctuations in a turbulent flow. (PS, V. 34) 167
Steinle, Frank W., Jr. (JA, TC; see Murman, Earll M.)
Stengel, Robert F. Optimal guidance for the space shuttle transition. (JSR) 173
Stepner, David E. (JA; see Mehra, Raman K.)
Steinberg, Sy, Siemers, Paul M., III, and Slayman, Robert G. Development of the Viking parachute configuration by wind-tunnel investigation. (JSR) 101
Steiner, Jack Airline airplanes for the eighties—A response. (A/ A, March) 42
Stermole, F. J. (JSR; see Bain, R. L.)
Steven, Grant P. Stress diffusion in thick stiffened panels. (JA, EN) 779
Stevens, Frank L. (AIAA J; see Cohen, Charles J.)
Stine, H. A. (JSR; see Vorreiter, J. W.)
Stolarski, R. S., Cicerone, R. J., and Nagy, A. F. Impact of space shuttle orbiter re-entry on mesospheric NO_x. (AIAA J, TN) 395
Stollery, J. L. (AIAA J, TN; see Coleman, G. T.)
Stone, D. R. (AIAA J, SYN; see Throckmorton, D. A.)
Storaasli, O. (JA, SYN; see Fulton, Robert E.)
Storaasli, Olaf O. and Sobieszczanski, Jaroslaw On the accuracy of the Taylor approximation for structure resizing. (AIAA J, TN) 231
Strand, Leon D., Schultz, August L., and Reedy, Gary K. Microwave Doppler shift technique for determining solid propellant transient regression rates. (JSR) 75
Straub, William L., Jr. Managerial implications of computerized aircraft design synthesis. (JA) 129
Stuart, Richard J. and Carney, John F., III Vibration of annular plates with edge-beams. (AIAA J, SYN) 5
Stuiver, Willem (AIAA J, SYN; see Saeed, Iftikhar)
——(AIAA J, SYN; see Sharma, Subhash Chander)
——Dynamics and configuration control of two-body satellite systems. (JSR, SYN) 545
Sturek, Walter B. Turbulent boundary-layer shear stress distributions for compressible adverse pressure gradient flow. (AIAA J, TN) 375
Sturman, John C. (PS, V. 34; see Lesco, Daniel J.)
Sturrock, Peter A. UFO reports from AIAA members. (A/ A, May) 60
Su, Y.-W. T. (AIAA J; see Craig, R. R., Jr.)
Subramanian, N. R. (JA, EN; see Krishnamurthy, V.)
Sullivan, Edmund, Jr. Study of wind effects on electrostatic autopilots. (JA) 221
——Reply by author to M. L. Hill and W. A. Hoppel. (JA, TC) 782
Sullivan, Roger D. (JA; see Donaldson, Coleman duP.)
Sullivan, Thomas E. (JA, EN; see Burnham, David C.)
Summerfield, M. (AIAA J; see Abdelhamid, A. N.)
——(AIAA J; see Kuo, K. K.)
——(AIAA J; see Kubota, N.)
Sun, Chen-Chih and Childs, Morris E. Flowfield analysis for successive oblique shock wave-turbulent boundary-layer interactions. (JA) 54
Sun, C. T. and Lai, R. Y. S. Exact and approximate analyses of transient wave propagation in an anisotropic plate. (AIAA J, TN) 1415
Sun, John (AIAA J; see Nayfeh, Ali Hasan)
Sun, Y. S. (AIAA J; see Ueng, C. E. S.)
Sutton, George W. Editorial. (AIAA J, E) 1
Sutton, James G. Shuttle extra-vehicular life support equipment. (JSR, EN) 442
Sutton, Kenneth Coupled nongray radiating flow about ablating planetary entry bodies. (AIAA J) 1099
Suyderhoud, H. G. and Onufry, M. Performance of a digital adaptive echo canceller in a simulated satellite circuit environment. (PS, V. 33) 455
Swales, P. D., McGregor, R. C., and Wright, A. J. Correlation of force measurements and separated flow regions on surface piercing struts. (JH, EN) 72
Swaney, Thomas G. (AIAA J, TN; see Janssen, Terry L.)
Swanson, D. E. and Crowe, C. T. Cylindrical wing-body configurations for space-limited applications. (JSR, EN) 60
Swigart, Rudolph J. Cross-hatching studies—A critical review. (AIAA J, SA) 1301
Switzky, Harold and Wang, Ping-Chun Minimum weight design of finite element structures. (AIAA J) 170
Synofzik, R. (AIAA J, TN; see Garen, W.)
Tabaddor, F. (JSR, EN; see Chen, C. H. S.)
Tabakoff, W. (AIAA J, SYN; see Hamed, A.)
Tai, Tsze Cheng Transonic inviscid flow over lifting airfoils by the method of integral relations. (AIAA J) 798
——Comment on "Analysis of embedded shock waves calculated by relaxation methods." (AIAA J, TC) 735
Takayama, K. Laminar boundary layer behind a shock wave propagating along perforated walls. (AIAA J, TN) 1152
Talbot, L. (AIAA J, SA; see Chung, P. M.)
Tannehill, J. C., Mohling, R. A., and Rakich, J. V. Numerical computation of hypersonic viscous flow over a sharp leading edge. (AIAA J, SYN) 129
Tanner, M. Comment on "The lift force due to von Karman's vortex wake." (JH, TC) 123
Tapley, B. D. (AIAA J, SYN; see Schutz, B. E.)
Taran, J. P. E. (AIAA J; see Regnier, P. R.)
Tarzanin, F., Jr. (JA; see Gabel, R.)
Tate, Atsushi (AIAA J, TN; see Inouye, Kenji)
Tawakley, V. B. Similarity laws for missiles of minimum ballistic factor. (JSR, EN) 671
Taylor, Allan A. and Hoffman, Joe D. Design of maximum thrust nozzles for nonequilibrium chemically reacting flow. (AIAA J, SYN) 1299
Taylor, Clayborne D. (AIAA J; see Murphree, David L.)
Taylor, G. Q. (JSR, EN; see Messner, A. M.)
Taylor, J. P. (JSR, EN; see Jenkins, R. B.)
Telionis, Demetri P. (AIAA J; see Nayfeh, Ali Hasan)
——(AIAA J; see Tsahalis, D. Th.)
Telionis, D. P. and Tsahalis, D. T. Response of separation to impulsive changes of outer flow. (AIAA J) 614
Tene, Yair (AIAA J; see Sheinman, Izhak)
——(AIAA J, TC; see Sheinman, Izhak)
Teper, Gary L. (JA; see Johnson, Walter A.)
Terdan, Fred F. (JSR; see Serafini, John S.)
Teske, M. (AIAA J; see Lewellen, W. S.)
Test, Frederick L. Analytical prediction of the influence of polymer additives on the shear drag of bodies of revolution. (JH, SYN) 45
Tewell, J. R., Ray, A. M., Meirick, R. P., and Polhemus, C. E. Teleoperator visual system simulations. (JSR) 418
Theisen, J. G. (JA; see Ruo, S. Y.)
Theobald, Richard T. Attitude motion of a roll accelerated vehicle. (JSR, EN) 857
Thomassen, K. I. (JSR; see Vondra, R. J.)
Thompson, J. F., Shanks, S. P., and Wu, J. C. Numerical solution of three-dimensional Navier-Stokes equations showing trailing tip vortices. (AIAA J) 787
Thompson, Samuel B., Arnold, Frederick, Sanderson, Richard B., and Mantz, Arlan W. Optical properties of cryodeposits on low scatter mirrors. (PS, V. 35) 229
Thornton, C. L. and Finley, S. G. Square-root algorithm for evaluating mismodeled process noise. (JSR) 223
Thornton, W. A. and Majumder, D. K. Reanalysis information for eigenvalues derived from a differential equation analysis formulation. (AIAA J, TN) 1749
Throckmorton, David A. (JSR, EN; see Dunavant, James C.)
Throckmorton, D. A. and Stone, D. R. Model wall and recovery temperature effects on experimental heat-transfer data analysis. (AIAA J, SYN) 1169
Tien, C. L. and Cunnington, G. R. Radiation heat transfer in multilayer insulation having perforated shields. (PS, V. 35) 65
Timmons, J. D. (JSR; see Moog, R. D.)
Tiroshi, Igal and Elliott, Jarrell R. Explicit model following control scheme incorporating integral feedback. (JA, EN) 364
Tischler, A. O. Lower space costs mean more space flight. (A/ A, June) 22
Tomlinson, J. G. (JA; see Verkamp, F. J.)
Tong, Pin Nonlinear instability of a helicopter blade in hovering. (AIAA J) 360
——(AIAA J, TN; see Mau, S. T.)
Tong, Pin and Adachi, J. On the dynamic buckling of shells of revolution. (AIAA J, TN) 863

Topping, R. F. (PS, V. 34; see Louis, J. F.)
Torda, T. Paul (AIAA J; see Morel, Thomas)
Torvik, P. J. (JA, EN; see Cardea, G. C.)
Touryan, K. J. (AIAA J, SA; see Chung, P. M.)
Tramm, P. C. (JA; see Huffman, G. David)
Tran, Nam C. (AIAA J, SYN; see Arndt, Roger E. A.)
Trapp, W. J. (AIAA J; see Yang, J.-N.)
Trexler, Carl A. Performance of an inlet for an integrated scramjet concept. (JA, EN) 589
Trolinger, J. D., Belz, R. A., and O'Hare, J. E. Holography of nozzles, jets, and spraying systems. (PS, V. 34) 249
Trost, J. E. (AIAA J, SYN; see Shackleford, W. L.)
Tsahalis, D. Th. and Telionis, D. P. Oscillating laminar boundary layers and unsteady separation. (AIAA J) 1469
——(AIAA J; see Telionis, D. P.)
Tsou, F. K., Chou, P. C., and Singh, I. Apparent tensorial conductivity of layered composites. (AIAA J) 1693
Tsuchiya, Kazuo and Saito, Haruo Dynamics of a spin-stabilized satellite having flexible appendages. (AIAA J) 490
Tsuei, Y. G. (AIAA J, TN; see Nilson, R. H.)
Tsui, Tien-Yu (AIAA J; see Lakshmikantham, C.)
Turco, R. P. (AIAA J; see Whitten, R. C.)
Turner, L., III (AIAA J; see Wu, J. C.)
Tyler, James S. (JA; see Mehra, Raman K.)
Ueng, C. E. S. and Sun, Y. S. Large elastic deformation of an inflatable membrane of revolution. (AIAA J) 761
Uman, M. A. (JSR; see Krider, E. P.)
Unruh, James F. and Bass, Robert L., III Doublet lattice-source method for calculating unsteady loads on cavitating hydrofoils. (JH) 146
Unsworth, K. (AIAA J, TC; see Bradshaw, P.)
Usiak, Leonard and Ramsden, Philip Minuteman III liquid propulsion system storage surveillance program. (JSR, EN) 792
Vachon, W. A., Fairbanks, D. R., Martorana, R. T., and Nathanson, D. Thermal control of the Apollo 17 lunar traverse gravimeter. (PS, V. 35) 517
Vaeth, J. Gordon The airship can meet the energy challenge. (A/ A, February) 25
Vaicaitis, R., Dowell, E. H., and Ventres, C. S. Nonlinear panel response by a Monte Carlo approach. (AIAA J) 685
Van Allen, James A. and Randall, Roger F. Jupiter's magnetosphere as observed with pioneer 10. (A/ A, July-August) 14
Van Cleve, G. C. Inflight engine condition monitoring system. (PS, V. 34) 471
Vander Veen, Richard, Gentry, Roy, and Hoffman, Joe D. Design of shrouded-plug nozzles for maximum thrust. (AIAA J) 1193
Van Roberts, J. and Rohy, David A. Gas temperature-density (GTD) sensor for turbine inlet gas temperature measurement. (PS, V. 34) 355
Varsi, Giulio (AIAA J; see Back, Lloyd H.)
Varwig, R. L. Photographic observations of CW HF chemical laser reacting flowfield. (AIAA J, TN) 1448
Varwig, Robert L. and Kwok, Munson A. CW HF chemical laser flow diagnostic measurements. (AIAA J) 208
Vatsa, V. N. (AIAA J; see Werle, M. J.)
Vendhan, C. P. and Dhoopar, B. L. Nonlinear vibration of orthotropic triangular plates. (AIAA J, ERR) 1008
Ventres, C. S. (AIAA J; see Vaicaitis, R.)
Venugopal, V. K. (AIAA J, TN; see Durgapal, U. C.)
Verdon, Joseph M. Unstead flow downstream of an airfoil oscillating in a supersonic stream. (AIAA J, TN) 999
Verdouw, A. J. (JA; see Verkamp, F. J.)
Verkamp, F. J., Verdouw, A. J., and Tomlinson, J. G. Impact of emission regulations on future gas turbine engine combustors. (JA) 340
Vicario, A. A., Jr., Freeman, W. T., Jr., and Casseday, E. D. High-temperature properties and failure criteria for rocket nozzle materials. (JSR) 631
Vickery, W. K. (AIAA J; see Rosenberg, N. W.)
Vier, W. F., III (JA; see Kutschenreuter, P. H., Jr.)
Viets, Hermann (JA, SYN; see Boyle, Robert E., Jr.)
Vijayakumar, K. (AIAA J; see Ramaiah, G. K.)
Vincent, T. L., Cliff, E. M., Grantham, W. J., and Peng, W. Y. Some aspects of collision avoidance. (AIAA J, SYN) 3
Vinh, N. X. Series expansion of the eccentricity for near parabolic orbits. (AIAA J, TN) 281
Viskanta, R. (PS, V. 35; see Bergstrom, R. W., Jr.)
Vondra, R. J. and Thomassen, K. I. Flight qualified pulsed electric thruster for satellite control. (JSR) 613
Vorreiter, J. W., Burns, J. J., Pitts, W. C., and Stine, H. A. Atmosphere-entry behavior of a modular, disk-shaped isotope heat source. (JSR) 308
Wadsworth, Donald van Z. Vinti solution for free-flight rocket trajectories. (AIAA J, TC) 1296
Wagner, D. A. (AIAA J; see Pate, S. R.)
Wagner, Hans (JSR, SYN; see Bhat, B. Rama)
Walkden, F., Laws, G. T., and Caine, P. Shock capturing numerical method for calculating supersonic flows. (AIAA J) 642
Walker, J. S. (AIAA J, TN; see Evbuoma, S. N.)
Waltrup, Paul J. and Billig, Frederick S. Structure of shock waves in cylindrical ducts. (AIAA J, ERR) 736
Waltrup, Paul J. and Cameron, James M. Wall shear and boundary-layer measurements in shock separated flows. (AIAA J, TN) 878
Waltz, Donald M. and Quantock, Charles W. Manned Earth orbital laboratories to perform communications/ navigation research. (PS, V. 32) 363
Wan, F. Y. M. and Lakshmikantham, C. Spatial correlation method and a time-varying flexible structure. (AIAA J) 700
Wang, Bo Ping (AIAA J; see Pilkey, Walter D.)
Wang, Chi R. (AIAA J, TN; see Zakkay, V.)
Wang, K. C. Laminar boundary layer near the symmetry plane of a prolate spheroid. (AIAA J) 949
Wang, Ping-Chun (AIAA J; see Switzky, Harold)
Wang, Taylor G., Saffren, Melvin M., and Elleman, Daniel D. Acoustical levitation for space processing. (A/ A, July-August) 42
Ward, J. Richard Specific heat of X14 propellant. (AIAA J, TN) 107
Ward, Theodore E. and Schuster, John R. Cooland pressurization and expulsion for transpiration nosetips. (JSR) 518
Wardlaw, Andrew B., Jr. Prediction of yawing force at high angle of attack. (AIAA J, TN) 1142
Warsi, Z. U. A. One-parameter solution of the spanwise rotating blade boundary-layer equation. (AIAA J, TN) 1421
Warsi, Z. U. A. and Mertaugh, L. J. Estimation of turbulent energy dissipation using available transfer theories. (AIAA J, TN) 237
Washizu, Kyuichiro (AIAA J; see Goto, Norihiro)
Wassel, A. T. and Mills, A. F. Combustion of carbon particles in a hypersonic turbulent boundary layer. (JSR) 803
Watson, H. H. H. (JSR; see Fearn, D. G.)
Watson, Leon E., Jr. (AIAA J, TN; see Oberkampf, William L.)
Weaver, William L. Mars surface-to-orbit vehicles for sample return missions. (JSR, EN) 426
Webb, Clifford M. Thermal design of a Saturn/ Uranus atmospheric entry probe. (PS, V. 35) 499
Webb, William L. and Reukauf, Paul J. Turbine inlet gas temperature measurement system using a fluidic temperature sensor. (JA) 422
Weidenbaum, Murray L. Restoring private enterprise to the defense industry. (A/ A, Nov.) 15
Weinberg, Felix J. (A/ A, Nov.; see Oppenheim, Antoni K.)
Weingarten, Norman C. (JA, SYN; see Hall, G. Warren)
Weinstein, Leonard M. (AIAA J, SYN; see Fischer, Michael C.)
Weiss, I. M. Information content subsetting of highly correlated error sources. (AIAA J) 1726
Weisshaar, Terrence A. Influence of static aeroelasticity on oblique winged aircraft. (JA, EN) 247
——Influence of static aeroelasticity on oblique winged aircraft. (JA, ERR) 784
Weisshaar, Terrence A. and Ashley, Holt Static aeroelasticity and the flying wing, revisited. (JA,EN) 718
Wells, Gerald R. (AIAA J; see de Virgilio, Miguel A.)
Werle, M. J. and Vatsa, V. N. New method for supersonic boundary-layer separations. (AIAA J) 1491
Westerman, C. W. (PS, V. 33; see Gregorwich, W. S.)
Weston, Kenneth C. and Reddy, R. S. Unsteady temperature distribution in volume reflectors. (AIAA J, TN) 716
Weston, Robert P. (AIAA J; see Fearn, Richard)
Westphal, L. C. Optimal scheduling of a satellite control network using zero-one linear programing. (JSR, EN) 731
Wheatcroft, Stephen Aeroplanes for the eighties. (A/ A, March) 34
Whisnant, J. M. (JSR, EN; see Lohfeld, R. E.)
Whitehead, Allan H., Jr. (JSR, EN; see Hefner, Jerry N.)
Whitesides, John L. (AIAA J; see Poole, Lamont R.)
Whitfield, D. L., Lewis, J. W. L., and Williams, W. D. Measurements in the near field of supersonic nozzles for chemical laser systems. (AIAA J, TN) 870
Whitfield, Jack D. Ground testing and simulation—An overview: Part I: Economics. (A/ A, June) 54
Whitsett, C. E. (JSR; see Murtagh, T. B.)
Whitten, R. C. and Turco, R. P. Perturbations of the stratosphere and mesosphere by aerospace vehicles. (AIAA J) 1110
Whitworth, J. E. (PS, V. 32; see Henry, V. F.)
Widnall, Sheila E. (AIAA J; see Chu, Sing)
Widnall, William S. Filtering and smoothing simulation results for CIRIS inertial and precision ranging data. (AIAA J) 856

Wierum, F. A. (PS, V. 35; see Bannerot, R. B.)

Wilbur, Paul J. Performance of a fifteen-centimeter ion thruster with reliable restart capability. (JSR) 621

——Mercury flow meter for ion thruster testing. (JSR, EN) 728

Wilcox, David C. (AIAA J; see Saffman, P. G.)

——Reply by author to D. C. Reda. (AIAA J, TC) 1292

Wilcox, James C. Competitive evaluation of failure detection algorithms for strapdown redundant inertial instruments. (JSR) 525

Willems, P. Y. (AIAA J; see Boland, P.)

Williams, C. L. and Colwell, G. T. Heat pipe model accounting for variable evaporator and condenser lengths. (AIAA J) 1261

Williams, James C., III Large amplitude, low frequency solutions for a certain class of laminar boundary-layer problems. (AIAA J, SYN) 265

Williams, James C., III and Johnson, W. Donald Semisimilar solutions to unsteady boundary-layer flows including separation. (AIAA J) 1388

——and Johnson, W. Donald Note on unsteady boundary-layer separation. (AIAA J, TN) 1427

Williams, Thomas E. (JSR, EN; see Guman, William J.)

Williams, W. D. (AIAA J, TN; see Whitfield, D. L.)

Willoughby, P. G. (AIAA J, TN; see Dunlap, R.)

Wing, L. D. Method for calculating aerodynamic heating on sounding rocket tangent ogive noses. (JSR) 357

Winther, B. A. (JA; see Rowe, W. S.)

Withers, D. J. and Jefferis, A. K. A Time division multiple-access system for INTELSAT. (PS, V. 33) 393

Witherspoon, G. F. (JA, EN; see Cebeci, Tuncer)

Witmer, Emmett A. (AIAA J; see Morino, Luigi)

Witte, A. B. (AIAA J, SYN; see Shackleford, W. L.)

Witte, K. J. (AIAA J; see Brederlow, G.)

Wittrick, W. H. Comment on "Finite element structural analysis of local instability." (AIAA J, TC) 123

Witze, Peter O. Centerline velocity decay of compressible free jets. (AIAA J, SYN) 417

Wolf, Dean A simplified dynamic model of parachute inflation. (JA) 28

——(JA; see McVey, D. F.)

Womack, William C., Bert, Charles W., and Perdreauville, Farrell J. Dynamics of sounding rockets at burnout. (JSR) 716

Wong, J. K. S., Sandri, R., and Newman, J. A. A new experimental method for the investigation of fuel spray evaporation. (AIAA J) 269

Wong, W. C. (PS, V. 33; see Duncan, J. W.)

Wood, Lincoln J. Second-order optimality conditions for the Bolza problem with both endpoints variable. (JA) 212

——Comment on "Neighboring extremals for optimal control problems." (AIAA J, TC) 1452

Woodcock, Gordon R. (JSR; see Patha, John T.)

Wool, Mitchell R., Murphy, Andrew J., and Rindal, Roald A. Calorimeter measurement of heat transfer at hypersonic conditions. (JSR) 363

Woolley, James P. and Karamcheti, K. Role of jet stability in edgetone generation. (AIAA J, SYN) 1457

Worster, Bruce W. Particulate infrared radiation in aluminized solid-fuel rocket plumes. (JSR, EN) 260

Wortman, Andrzej Foreign gas injection at windwardmost meridians of yawed sharp cones. (AIAA J, SYN) 741

——Comments on the "Increase of boundary-layer heat transfer by mass injection." (AIAA J, TC) 573

Wortman, A. and Franks, W. J. Reversed boundary-layer flows with variable fluid properties. (AIAA J, TN) 406

Wray, W. O. (JA; see Bradley, R. G.)

Wright, A. J. (JH, EN; see Swales, P. D.)

Wright, Jan Robert Flutter test analysis in the time domain using a recursive system representation. (JA, EN) 774

Wright, W. H. Wobble correction for a dual-spin vehicle. (JSR, EN) 255

Wu, J. C. (AIAA J; see Thompson, J. F.)

Wu, J. C. and Turner, L., III Linear theory for chemically reacting flows. (AIAA J) 468

Wu, James H. T., Ostrowski, P. Perry, Neemeh, Rafik A., and Lee, Patrick H. W. Experimental investigation of a cylindrical resonator. (AIAA J) 1076

Wu, J. M. (AIAA J; see Kimble, K. R.)

Wuerker, R. F. (PS, V. 34; see Matthews, B. J.)

Yackel, R. A. (JSR; see Kuo, B. C.)

Yamasaki, Hiroyuki (AIAA J, TN; see Shioda, Susumu)

Yang, H. K. and Yu, C. P. Experimental study of mixed convection heat transfer in an MHD channel. (AIAA J, TN) 1740

Yang, J.-N. and Trapp, W. J. Reliability analysis of aircraft structures under random loading and periodic inspection. (AIAA J) 1623

Yang, Tien Tsai (AIAA J, TN; see Robinson, Lawrence Baylor)

Yang, T. Y. (JSR; see Baig, M. I.)

Yang, T. Y. and Kim, H. W. Asymmetrical bending and vibration of a conical shell finite element. (AIAA J, SYN) 257

Yates, D. N. (AIAA J; see Sharifi, P.)

Yates, E. Carson, Jr. (JA; see Ruo, S. Y.)

Yates, John E. Calculation of initial vortex roll-up in aircraft wakes. (JA) 397

——Linearized integral theory of three-dimensional unsteady flow in a shear layer. (AIAA J) 596

Yeh, T. T. (AIAA J; see Rosciszewski, J. J.)

York, Randy J. (JSR, SYN; see Pastrick, Harold L.)

Yoshikawa, Kenneth K. Numerical solution of a nonlinear integral equation by the use of step functions: III. continuous solutions. (AIAA J, TN) 1769

Yoshikawa, Takao (AIAA J, TN; see Kusumoto, Keiichi)

Young, D. L. (JSR; see Hearn, H. C.)

Young, Maurice I. and Bailey, David J. Stability and control of hingeless rotor helicopter ground resonance. (JA) 333

Yovanovich, M. Michael A general expression for predicting conduction shape factors. (PS, V. 35) 265

——(JSR, EN; see Schneider, G. E.)

Yovanovich, M. Michael and Kitscha, W. W. Modeling the effect of air and oil upon the thermal resistance of a sphere-flat contact. (PS, V. 35) 293

Yu, C. P. (AIAA J, TN; see Yang, H. K.)

Zahalak, G. I. and Myers, M. K. On the accuracy of Whitham's method. (AIAA J) 203

Zakkay, V., Wang, Chi R., and Miyazawa, M. Effect of adverse pressure gradient on film cooling effectiveness. (AIAA J, TN) 708

Zankl, G. (AIAA J, TN; see Daily, J. W.)

Zelazny, S. W. Study of methods for modeling centerline mass fraction decay in turbulent jets. (AIAA J, TN) 235

Zeldin, Saydean and Speyer, Jason Maximum noise abatement trajectories. (JA, EN) 119

Zetkov, George (JSR, SYN; see Austin, Fred)

Zinkham, R. E. (JA; see Levy, S. A.)

Zinko, H. (AIAA J; see Brederlow, G.)

Zinn, B. T. (JSR; see Janardan, B. A.)

Zukas, J. A. Effects of transverse normal and shear strains in orthotropic shells. (AIAA J, TN) 1753

Information for Contributors to Journals of the AIAA

General Requirements: Send all manuscripts, with covering letter, to the Managing Editor, AIAA Scientific Publications, 1290 Avenue of the Americas, New York, N.Y. 10019. Each manuscript must be accompanied by written assurance as to security clearance in the event the subject matter lies in a classified area or if the paper originates under government sponsorship. Full responsibility rests with the author. Signed assurance must be given that the manuscript or its equivalent *has not been submitted for publication elsewhere*. The AIAA has prior publication rights to any paper presented at its meetings, but preprints will be considered for publication only if the author requests it. All manuscripts must be as *brief and concise* as proper presentation of the ideas will allow.

Send 4 complete copies of each manuscript and 4 sets of figures. The manuscript must be in English, typed *double spaced* on one side of the page only, with wide margins to allow for editorial instructions. Footnotes, references, and figure captions also should be typed double spaced. Use standard-size ($8\frac{1}{2}$- × 11-in.) good-quality bond paper.

Synoptics: Alternatively, and at his option, an author may submit a Synoptic. Many subjects can be covered in a more useful and economical form for the majority of readers as a Synoptic, not exceeding 8 double-spaced typed pages (2 journal pages), with two major headings: *Theme*, which describes the purpose of the papers; and *Contents*, which is a concise but self-sufficient presentation of the key results in a form that readers can use without having to consult the full paper. Prior work and details of methodology generally may be omitted, but a few key references may be cited for important related work. Make a serious effort to write the Synoptic so that it is understandable to the general engineering community by replacing specialist jargon terms and acronyms with terms that the nonspecialist can understand. Where a device is the subject of the paper, a simple line diagram showing those elements being discussed in the Synoptic should be given. Coordinates should be shown on the diagram when pertinent, and symbols appearing in the tables and graphs of the Synoptic should be defined. Information should be given in tabular form rather than in prose when this simplifies the presentation and expedites comprehension. The relation of the author's contribution to the state-of-the-art should be indicated briefly.

If you have submitted a full paper, the Editors may request you to prepare a Synoptic for review instead. A Synoptic must still be accompanied by a full paper, preprint, or company report for verification. If the Synoptic is published, the full text will be available to interested readers. Complete citation data will appear in a footnote on first page of Synoptic.

Full-Length Papers: In terms of standard-size *double-spaced* typed pages, the maximum length for full-length papers is 36 pages (including equations), where each normal-sized figure counts as one page. If a figure has several parts, each part counts as one page. Greater length usually will be unacceptable and may be the basis for return of the paper to the author for reduction prior to review.

Abstract: Each full-length paper must be accompanied by a 100- to 200-word abstract, written as a single paragraph. It should be a summary (not an introduction!) and complete in itself (no numerical references). The abstract should indicate the subjects dealt with in the paper and should state the objectives of the investigation. Newly observed facts and conclusions of the experiment or argument discussed in the paper must be stated in summary form. Readers should not have to read the paper to understand the abstract.

Introduction: The paper also must include an Introduction a brief assessment of prior work by others and an explanation of how the paper contributes to the field.

Technical (or Engineering) Notes and Technical Comments: Short manuscripts, not exceeding one quarter the length stated for a full paper, may qualify for publication in one of these categories. *Notes* are intended for prompt disclosures of new, significant data or developments of limited scope. *Comments* should relate to papers previously published by AIAA. These categories are reviewed only by an editor and usually are published several months sooner than a full paper or Synoptic.

Titles and Authors' Names: The title should be brief and concise. The author's name should be typed on the line below the title, and it is preferable to use the full name. The company affiliation should follow on the next line, with the author's official title given in a footnote. This applies to all categories of papers.

Mathematics: Equations and symbols may be handwritten or typewritten; clarity is essential. If handwritten, be sure that a reader can distinguish between capital and lower case letters; the letter o and zero; ell, the number one, and prime; k and kappa; u and mu, v and nu, n and eta. Always use the *solidus* for fractions in the text and for simple fractions in displayed equations.

References: References are to be grouped at the end of the manuscripts and are to be given as follows:

1) Journals: Walker, R. E., Stone, A. R., and Shandor, M., "Secondary Gas Injection in a Conical Rocket Nozzle," *AIAA Journal*, Vol. 1, Feb. 1963, pp. 334–338.

2) Books: Turner, M. J., Martin, H. C., and Leible, R. C., "Further Development and Applications of Stiffness Method," *Matrix Methods of Structural Analysis*, 1st ed., Vol. 1, Macmillan, New York, 1964, pp. 203–206.

Segre, E., ed., *Experimental Nuclear Physics*, 1st ed., Vol. 1, Wiley, New York, 1953, pp. 6–10.

3) Reports: Book, E. and Bratman, H., "Using Compilers to Build Compilers," SP-176, Aug. 1960, Systems Development Corp., Santa Monica, Calif.

4) Transactions Proceedings: Soo, S. L., "Boundary Layer Motion of a Gas-Solid Suspension," *Proceedings of the Symposium on Interaction between Fluids and Particles*, Institute of Chemical Engineers, Vol. 1, 1962, pp. 50–63.

Always give inclusive page numbers for references to journal articles and a page or chapter number for books. Each reference must be cited in the text.

Illustrations: Line drawings must be clear and sharp. Use black ink on white paper or tracing cloth. Lettering should be large enough to be legible (at least $\frac{1}{16}$ in. high) after reduction. Plan figures for reduction to column width ($3\frac{1}{4}$ in.). Photographs should be glossy prints, not matte or semimatte. Each figure must have a caption; captions should be listed on a separate sheet. Write your name and the figure number in the margin of each figure. Cite each figure in numerical order in the text.

Tables: Type a double rule at the top and bottom of each table and a single rule under the column headings. Table footnotes should be placed under the final double rule and should be indicated by letters, a, b, c, etc. Do not number table footnotes consecutively with text references. Each table must have a number and a caption. Cite each table in numerical order in the text.

Symbols and Units: Use standard symbols whenever possible, preferably those recommended by the American Standards Association. The metric or dual systems of units (metric and English) should be used, wherever possible, in accordance with an endorsement by the AIAA Board of Directors. Although such use is not mandatory, authors are urged to comply.

New technology is being created all the time.

Keep up to date with the AIAA Selected Reprint Series.

An editor prominent in his field draws from the recent literature the most significant new developments and adds an extensive bibliography and timely overview. With more immediacy than a textbook, but more perspective than the latest proceedings, each volume serves as an introduction to the field as well as bringing professionals up to speed. Learning is a life-long process.

Published by the AIAA at low cost with the aid of the Sherman M. Fairchild Fund.

VOLUMES AND EDITORS

XVI **HEAT PIPES**
C-L. Tien

XV **COMPUTER FLUID DYNAMICS—RECENT ADVANCES**
F. H. Harlow

XIV **TURBULENCE TRANSPORT MODELING**
F. H. Harlow

XIII **THE EARTH'S ATMOSPHERE**
W. W. Vaughan and L. L. DeVries

XII **ASTRODYNAMICS AND CELESTIAL MECHANICS**
V. G. Szebehely

XI **AERODYNAMIC NOISE**
A. Goldburg

X **SOLID PROPELLANT TECHNOLOGY**
F. A. Warren

IX **AEROPHYSICS OF AIR POLLUTION**
J. A. Fay and D. P. Hoult

VIII **JET TRANSPORT DESIGN**
J. M. Swihart

VII **RADIATIVE GAS DYNAMICS**
R. J. Goulard

VI **RAMJETS**
G. L. Dugger

V **AERODYNAMIC FLUTTER**
I. E. Garrick

IV **COMPUTATIONAL FLUID DYNAMICS**
C. K. Chu

III **ION PROPULSION**
A. T. Forrester and G. Kuskevics

II **MAGNETO FLUID DYNAMICS**
W. R. Sears

I **ATMOSPHERE ENTRY**
A. J. Eggers Jr. (out of print)

Volumes I-XIII from this Series are $2.50 per copy. Volumes XIV-XVI are $3.00 per copy. All sales are final. Orders *must be accompanied by remittance* and should be addressed to the American Institute of Aeronautics and Astronautics, Special Publications Department, 1290 Avenue of the Americas, New York, N.Y. 10019.